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Canadian Research in Education: A State of the Art Review

Report prepared for the Social Sciences and Humanities Research Council of Canada under the sponsorship of the Canadian Society for the Study of Education

John H.M. Andrews, W. Todd Rogers, Editors

Canada

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PART I: OVERVIEW

Chapter 1

PURPOSES AND PROCEDURES

John H.M. Andrews
W. Todd Rogers*

BACKGROUND

In recent years it has become increasingly clear that research in Education has been underfunded by the Social Sciences and Humanities Research Council (SSHRC). That is to say that the field of study of Education has few projects funded compared to most other social sciences and humanities supported by SSHRC. Not only are the numbers of applications disproportionately low but the success rate is also. After reviewing the many factors involved, Wisenthal, in a related study, concluded that Education receives only 10% of the research support from the Council which it could expect if proportional numbers of applications were made and if the success rates for Education were the same as those of all fields.

As might be expected, this situation has led to some acrimony over the years between the community of researchers in Education and representatives of SSHRC. Disputes over who is to blame have matured, however, into a common realization that both "sides" desire an improvement in the situation, and if that is to happen, a programme of cooperative action is required. Thus discussions arose between officials of SSHRC and organizational representatives of researchers in Education, out of which came the general plans for this study and two others. The present study is sponsored by the Canadian Society for the Study of Education (CSSE), the major federation of learned associations in Education. A second study is sponsored by the Canadian Association of

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* John H.M. Andrews is Project Coordinator of this present study and is Professor and former Dean, Faculty of Education, University of B.C. W. Todd Rogers is Associate Project Coordinator and is Associate Professor at the same institute.

Deans of Education which, though an affiliate of CSSE, was felt to have distinct functional input. The third study, sponsored by the Canadian Society for the Study of Higher Education (CSSHE), deals separately with the field of higher education.

A prime instigator of this CSSE study was Naomi Hersom who, as then-President of CSSE, held discussions with SSHRC through 1980. John H.M. Andrews was appointed in November of that year to write a proposal for SSHRC funding and to coordinate the study which was expected to follow. The funding, expedited by the succeeding President, Robin H. Farquhar, was announced by SSHRC in March of 1981. A completion date of December 15, 1981 was set to allow the report to be considered by the Council at their March, 1982 meeting.

PURPOSES

The purposes of this study are (1) to provide for SSHRC a description of the nature of the field of study of Education, (2) to describe the nature of research in Education, and (3) to derive recommendations for SSHRC aimed at substantially increasing the amount of productive Canadian research in Education through changes in the Council's funding policies and procedures. This study is distinct from the other two in being the voice of researchers rather than deans and in being concerned with all fields of Education except Higher Education.

STUDY DESIGN AND PROCEDURE

The design was dictated by the nature of the target field of study. Education may be seen as a meaningful entity when viewed as an area of professional practice, but it is not a unitary or homogeneous field of study. It comprises a number of specializations or sub-fields which are usually referred to as applied disciplines. They have their own literature, their own journals, their own specialized scholars, their own organizations (not all within CSSE), and their own identifiable organizational units within Faculties or Colleges of Education.

As a result, research in Education can be studied meaningfully only through studying its components. For the present purposes eleven specializations

were initially identified, then later revised to ten. The sub-divisions cannot be ordered along one dimension in that some relate to disciplines (Educational Psychology and Educational Foundations), others are client-specific (Early Childhood Education, Special Education, Adult Education), and still others focus upon particular functions performed within educational institutions (Counselling, Administration, Curriculum and Instruction, Measurement and Evaluation, and Teacher Education).

Though much discussion has centred on how sub-fields should be identified, the divisions used here seem to represent a strong consensus view. Higher Education would normally be added to the client-specific fields but is being considered in a separate study. Fields like Comparative and International Education, which could legitimately have been added as separate fields, were grouped with other sub-fields because of their small size. For the same reason, such fields do not usually have separate existence within Faculties of Education. The most controversial choice, however, was the inclusion of all the pedagogical or teaching methodology areas under Curriculum and Instruction. Every teaching subject in schools is identifiable as a sub-field of study, e.g., Mathematics Education, and many come close to meeting the criteria for separate consideration. Again, logistics determined the decision to include all subject areas under Curriculum and Instruction.

The overall design was to have independent studies done for each of the ten specializations and then, growing out of these, a study dealing with all of Education to the extent that generalizations were possible. Todd Rogers was appointed Associate Coordinator and worked jointly with John Andrews in the selection of principal investigators.

Individuals were selected who met two primary criteria: (1) being recognized as one of the top Canadian researchers in their fields and (2) being willing and able to drop other plans to meet an incredibly short deadline of about three months. Representativesness by university, region, sex, language, and the like was attempted but was always subordinated to the two primary criteria. Deficiencies arising from this approach were expected to be remedied by unique strategies devised for each study. In some cases the principal investigator set up a team. In others conferences of colleagues were held. Some commissioned sub-papers. Others travelled Canada obtaining reactions to a draft paper. By rough estimate about 110 people were fairly closely involved in the total project.

The potential importance of the study in substantially increasing research funding in Education has ensured enthusiastic cooperation from the entire community of Educational researchers and potential researchers. Only with such outstanding support has it been possible to meet the extremely short time frame requested by SSHRC.

Chapter 2

SUMMARY AND RECOMMENDATIONS

John H.M. Andrews
W. Todd Rogers

THE DOMAIN OF EDUCATION

Education as a field of practice has been an important social function since antiquity. As a field of systematic study, its roots are traceable to the latter part of the nineteenth century.

In Canada it has been traditional for secondary school teachers to be trained at universities. Thus there have been university faculty members representing the field of Education from the earliest times. Indeed, it is reported that the first doctorate awarded by the University of Toronto in any field was in Education. The number of Professors of Education was small, however, and most were formerly eminent educators from the school systems who were appointed because of their practical experience and wisdom rather than for their scholarship. Each professor was a generalist. Although different courses were offered, many would usually be taught by the same professor. Indeed, in the smaller universities a single professor would teach all subjects.

These conditions prevailed in most parts of Canada until less that twenty years ago. Since then, such dramatic growth has taken place that Education in all sizable universities is organized as a separate faculty and in most universities is one of the larger faculties on campus. Many factors have accounted for this almost revolutionary growth. Of these, probably the most important were the development of teaching as an organized profession and the assimilation by the universities of the function and, in most cases, the staff of the normal schools. Teacher training was thus consolidated

within the university for both elementary and secondary teachers. This movement, which began in Western Canada in the 1950's, went largely to completion throughout Canada by the end of the 1960's.

Following amalgamation there ensued in each university a traumatic but zesty period of confrontation and integration as the strong practical traditions of the normal schools were challenged on every front by the scholarly values and practices of the university. At the risk of over-idealizing the union, at its best it embodies a fusion of theory and practice which sets it somewhat apart from the exclusive focus upon knowledge which typifies the training of professionals in most other fields in the university. Education stands virtually alone in combining in its undergraduate programmes coursework, which establishes a professional knowledge base, with an extensive practicum, in which real schools are used as laboratories.

This historical sketch is important because without being aware of the unique background one would be puzzled as to why Education is different in many ways from other faculties on campus. The insistence upon a union of scholarship and practice appears to others, whose sole concern is scholarship, to be a rejection of traditional university values. At least in part, this effect counts for the relatively low status ascribed to Education on most Canadian campuses.

Scholarship and research in Education have old roots, then, but they have blossomed in terms of both sophistication and output in direct parallel to the fairly recent growth of Faculties of Education. The structure of the field of study similarly parallels the specializations which have developed in response to the content requirements of the training programmes. For the purposes of this project ten sub-fields were identified, as described in Chapter One. Their main commonality is provision of knowledge and the improvement of educational practice. The nature of their contributions, however, is so widely diverse that meaningful generalizations across the whole field are difficult.

The first purpose of this study was to provide for SSHRC a description of the nature of the field of study of Education. Because of the diversity cited above, this purpose is accomplished through the individual studies of the ten areas of specialization. These appear as Chapters Three to Twelve in

Part II of this volume. The second purpose of the study was to describe the nature of research in Education. Here, also, diversity is so great that meaningful descriptions are unique to the various sub-fields. Indeed, as is true of academia in general, many of these sub-fields are themselves so highly differentiated in structure as to make generalization hazardous. Perhaps the most pertinent generalization across all these fields, then, is that because of their history they are not far beyond the pioneering stage in the process of building scholarly fields of study. How far beyond that stage is described in the following chapters for each field by one or more authors who, themselves, are central in the building process.

INCREASING RESEARCH PRODUCTION

The Problem

The third and central purpose of this study is to derive recommendations for SSHRC aimed at substantially increasing the amount of productive Canadian research in Education through changes in the Council's funding policies and procedures. This phrasing of the central purpose implies certain important assumptions. First, it assumes that present output is undesirably small. Second, because of the initiative of SSHRC in establishing this and the other two studies referred to previously, it is assumed that the Council is concerned about this level of output. Third, it assumes that increasing the output of educational research is important to our country. Indeed, an elaboration of this point becomes the pivotal thrust of this study.

A National Priority

The basic contention of this study is that the functions of Education in our society are so vital to the well-being of our country as to require that research directed toward its improvement be identified as a national priority.

Education is so deeply embedded in virtually all aspects of Canadian life that any brief attempt to depict its importance must necessarily be simplistic. The size of the enterprise is enormous. For example, in 1979-80 full-time students at all levels of Education totalled approximately 6.25 million, or over a quarter of our entire population. If the burgeoning numbers of part-time students are added, the fraction would be raised to somewhere close to a half of our total population. As far as jobs are concerned, there are 329,000 instructors which, together with all non-instructional staff, totals nearly a half million. And as for expenditures, the total spent in 1979-80 was $20.2 billion which was 7.8% of the GNP (Statistics Canada, 1981).

But Education's centrality in our country's affairs stems as much from its crucial contributions as from its size. If one looks at Education only for that component called training, as does the Dodge Report (1981: p. 153), it becomes clear that Education in its various forms is responsible for the development of the highly qualified labour force which is indispensible to the economy of an industrialized nation. Not only does it provide the technical skills, but it is our main credentialling service and is a major factor in the process by which our society selects and trains its leaders.

Beyond the economy, the classical reason for national emphasis on Education has been political. It is apparent that democracy as a form of government is dependent upon having an enlightened citizenry; the more enlightened, in general, the healthier and more stable is the country.

Since an essential aspect of nation-building is the development of a distinctive culture and sub-cultures, here again Education has a major role. Despite the many advantages which come from our neighbour, the United States, Canada's vulnerability to the spread of American culture makes the deliberate development of our own uniqueness all the more compelling.

Further, the personal impact of Education is so universal and deep that it must for this reason also be considered a matter of national interest. Nebulous though such humanistic values may be, Education is a major contributor to personal fulfilment in all aspects of life. It is a vehicle through which people seek occupational achievement, enjoyment of leisure, understanding of

others and themselves, and all the other pursuits which accumulate to being the cultivation of one's humanness.

Education is a vital factor, then, in our country's well-being economically, politically, culturally and personally. The effectiveness of our educational institutions is thus a matter of the most profound concern in its close relationship to the success of Canada and its people in all these areas.

Since Education is so central to our national life and to our very nationhood, the further question to be addressed is whether investment in research will eventuate in substantial improvement. For even the most developed fields of study this is a difficult point to establish with hard data. For Education, where relatively little generalizable research has been undertaken in Canada, the point must be taken largely on prospects. Some indications, however, can be adduced from governmental judgements in the United States where there have been many years to assess payoff. Of a number of possible comparisons between the United States and Canada, the most conservative is between the educational research expenditures of the National Institute of Education (Florio, 1979) and SSHRC (SSHRC, 1981). The comparison is between $91.20 million and $1.04 million. After allowing for the population difference between the two countries, this is still an expenditure of over nine times as much in the United States as in Canada. If crude attempts are made to compare all spending on educational research between the two countries the ratio in favour of the United States is even higher.

Another kind of evidence of the potential payoff for educational research arises from within our own country. Governments at all levels and private industry pay very large sums of money each year for contract research in Education. Presumably this practice would not persist unless they considered the results to be worth the expenditure. Where the test of cost-effectiveness can be applied with some precision, as in the case of highly applied institutional research in Education, the outcome of the test is strongly positive. That fact adds to the likelihood of similar, if not superior, payoff in more generalizable research.

Further, there is something unique about indigenous Canadian research which gives it an importance not to be obtained by simply borrowing research

results from other countries. Since by far the largest foreign producer of research in Education is the United States, most borrowing is from that country and, to a lesser extent, from the United Kingdom and France. Perhaps the most compelling case for increasing Canadian research is simply, but fundamentally, the need to keep our schools and other educational institutions Canadian in character. Given the many millions of our people receiving Education at various levels and the high degree of impact of such involvement upon individual lives, Education inevitably has a shaping influence on our whole society. The use of an alien, culturally-loaded knowledge base carries with it obvious perils for the development of Canadian culture. Moreover, from a straight pragmatic point of view, imported research results have unknown or questionable validity for Canadian settings. Yet, in the absence of anything better, it has been and continues to be common practice to base Canadian programmes and practices upon American and other foreign results.

For the reasons outlined above, the following recommendation is considered to be not only warranted but imperative. The first recommendation, then, is salient as the most fundamental of the study.

> RECOMMENDATION 1: THAT EDUCATION BE IDENTIFIED BY SSHRC AS A HIGH PRIORITY AREA FOR FURTHERING THE NATIONAL INTERESTS OF CANADA.

Origins of the Problem

As this study has attempted to determine ways of increasing research production in Education, it has proceeded with a no-fault intention. The posture taken has been constructive, focusing upon recommendations for improvement rather than dwelling upon the causes of the present predicament. Nevertheless, it is important to present, however briefly, some conclusions about causes in order to establish something of a context from which proposed changes emanate. In the most general terms there seem to be two kinds of causes or circumstances to be contended with. In the first place, a strong

research tradition and research infrastructure have not yet been well developed in Education. In most Faculties of Education, the active researchers constitute a small minority of the total faculty. Even though this proportion is expanding, the practice-orientation still outweighs the research-orientation or any combination of the two in most Faculties of Education. Although most professors appointed within the last ten or fifteen years hold doctorates which included basic research training, the majority have not had much involvement in conducting research since completion of their own doctoral dissertations. Many of the obstacles to continued involvement in research for them arise directly from the practice-orientation of the teacher education programmes in which they teach. These obstacles include, for example, the need for many faculty members to teach summer session, to be involved in supervision of student teaching during the academic year (which often requires extended periods of time away from the campus), and teaching loads which are often heavier than those typically found in other faculties. The need to be substantially involved with practising teachers and school administrators in providing in-service education programmes in school systems and other consultant services must also be met. Of those who do become involved in research, many feel an obligation to undertake contract research which usually contributes directly to policy formation for specific operating agencies, such as Ministries or Departments of Education. Such policy research activities are highly important but they generally do not contribute greatly to the growth of generalizable knowledge and the development and testing of new practices and programmes.

The second general cause of low production of research in Education is that SSHRC, as the major research funding agency, employs assessment and eligibility criteria, many of which may be appropriate for the social sciences and humanities in general but are not appropriate to the nature of educational research. Heavy emphasis upon theory and basic research and consonant de-emphasis on development and applied research, confusion regarding which of the funding agencies -- SSHRC, NSERC, MRC, Health and Welfare Canada -- proposals should be sent to, lengthy turn-around time, and the appearance of bias in adjudications are all problems which tend to discourage potential researchers in Education from preparing proposals and submitting them to SSHRC for funding.

While each of these two sources of problems is serious in itself, the intertwining of the two kinds further aggravates the predicament. As solutions are sought, not only each source but the interaction of the two must be viewed concurrently. While it is the specific mission of this study to focus on the part SSHRC can play in improving the situation, there should certainly be no implication that SSHRC is the major source of the problem. Nor can it be realistically suggested that SSHRC by itself can turn the situation around. It is clear that if success is to be achieved, major coordinated efforts must be exerted by researchers themselves, Faculties of Education, the teaching profession, and the operating agencies at all levels of Education.

Derivation of the Recommendations

The recommendations which follow in the balance of this chapter are intended to apply to all fields of Education. The majority were derived from recommendations arising from the studies of the ten areas of specialization, reports of which are in Part II. They do not, however, constitute a straight compilation and integration of those recommendations. Rather, they are the conclusions of the present two authors which, though heavily shaped by the background studies, do not purport to speak for those studies. Many important recommendations from the specialized studies are not included in this chapter for various reasons, the most common of which is that their relevance does not seem to be generalizable across the whole field.

Before turning to particular topics, a point must be made which applies to the entire study. In the face of the crucial need for Canadian research in Education and yet such a low success rate of Education proposals submitted for funding, an obvious approach to a solution would be to fund more or all of the proposals submitted. To the extent that this would lower the quality of research, however, we have no hesitation in rejecting that approach. The problem of quantity clearly cannot be treated except in the context of maintaining and improving quality. Having made the point at the outset that high standards of quality are essential, we avoid reiterating it as an accompanying caveat to all the other suggestions to be made.

The recommendations are presented in three sets. The first set is related

to the substance of educational research, the second to the needed development of research capacity, and the third to structure and procedures.

THE SUBSTANCE OF EDUCATIONAL RESEARCH

Provincial-Federal Jurisdiction

Officials of SSHRC indicate that an important obstacle in the funding of research in Education revolves around the fact that responsibility for Education is assigned to the provinces under the B.N.A. Act. In particular, this jurisdictional problem is cited as an important reason for emphasizing theoretical research. The view has been taken that the funding of practice-oriented research would be seen by provincial authorities as a form of federal interference. As complex as the whole area of intergovernmental relationships is, this particular policy response is a serious impediment to increasing the volume of high quality educational research. Indeed it seriously distorts funding patterns away from the very types of research usually seen by educational researchers as most relevant for Canadian needs.

To clarify this situation, provincial educational officials were contacted by the Project Coordinator to ascertain the degree of sensitivity which they, in fact, felt about the federal funding of Educational research. Over a period of four months, informal discussions were held with the Deputy Minister of Education or the Assistant Deputy Minister of Education of each province. These officials were assured that their comments would not be quoted individually but would appear in summary form in this report. No official was reluctant to discuss the topic or to have his views made known in summary form. A number of them phrased their responses quite carefully, however, and indicated their awareness of the possibility of links being made by others between this topic and some of the more general problems in federal-provincial relationships.

The results are summarized as follows:

1. Officials from eight provinces indicated that there were no sensitivities at all and that they welcomed federal funding of educational research

and hoped that it would increase. One Deputy Minister, Dr. Harry Fisher (Ontario), replied, "The only sensitivity this Ministry has on the matter is a feeling of frustration that educational research is so badly funded compared to other fields - and you can quote me on that!"

2. Officials from two provinces expressed their province's view that federal funds for research should be made available to the provinces to distribute according to their own priorities. Both officials did indicate, however, that if this preference were not possible they supported an increase in federal funding.

3. All of the provincial authorities agreed that any sensitivity which might conceivably arise due to federal funding of any particular kind of research would be dispelled if the researcher obtained the approval of those provincial agencies (school districts, colleges, training institutions) in which the study would be conducted.

Consideration of these findings led to the formulation of the following recommendation. If implemented, it is expected to satisfy the conditions of present federal-provincial jurisdictions and avoid the present artificial distortion favouring theoretical research.

RECOMMENDATION 2 (a): THAT SSHRC FEEL FREE TO EMPLOY FUNDING POLICIES WHICH DO NOT LIMIT THE AMOUNT OR KIND OF RESEARCH IN EDUCATION BECAUSE OF PROVINCIAL SENSITIVITIES, AND

(b): THAT ANY PROPOSALS WHICH MIGHT BE CONSIDERED SENSITIVE BE REQUIRED TO INCLUDE AN APPROVAL STATEMENT FROM THE COOPERATING AGENCIES IN WHICH THE RESEARCH IS TO BE CONDUCTED.

Requiring the approval of the cooperating agencies is, in fact, already stipulated by SSHRC procedures for ethical clearance whenever human subjects are used. This recommendation would in most cases not add a new practice, but does provide an assurance to the provinces which, informally, they have indicated would be satisfactory.

Theory versus Practice

The distinction drawn between theory-oriented research and applied or practice-oriented research and the emphasis placed upon the former by SSHRC is a major obstacle to the development of Education as a field of study. Such a policy fails to encompass the full range of high quality research which is needed in Education.

It has been suggested that the issue of concern here is only one of terminology, that SSHRC uses the term "theoretical" only to describe studies which are expected to produce generalizable results. If this is so, it is suggested that the term "generalizable" be preferred in order to avoid what may have been a major misunderstanding by both proposers and assessors.

Leading researchers are divided in their views as to the best strategy for acquiring generalizable knowledge in Education. Some advocate the traditional inductive-deductive or theory-oriented approach which requires the specification of a theory followed by the deduction of hypotheses which are then tested. Methodologies for this approach, usually highly quantitative, include the experimental, quasi-experimental, correlational and survey methods.

Others maintain that this approach is useful only in areas where enough knowledge has already accumulated that a new theory can be built which will have enough potential to be worth testing. They take the view that such studies are premature in many areas of Education and point out that existing knowledge is often so scanty or uncertain that theories growing from it are really shots in the dark. For support they point to the large number of studies which produce no conclusive results. These researchers advocate studies, including ethnographic and case studies, which deliberately do not begin with the specification of a theory. Instead, these studies, which are exploratory and inductive, deal with observations and seek meaning at a practical level. While the ultimate goal may be the derivation of theory, a great deal of practice-oriented research must be done first.

Still other leading researchers take the Research and Development view. These researchers prefer to employ the full range of approaches, from theory to practice, often in the same study.

Whatever view is taken of the best strategy for acquisition of knowledge, however, it is quite clear that the issues involved are central academic concerns which must be settled through scholarly processes rather than arbitrarily through funding criteria. Certainly the view taken here is that all research must be planned so that results can be expected to be generalizable. The only qualification to this is that in some of the newer qualitative approaches, such as case studies and ethnographic studies, the generalizability is expected to occur not from any single study but from the accumulation of such studies.

RECOMMENDATION 3: THAT IN THE ABSENCE OF SCHOLARLY AGREEMENT ABOUT THE BEST KNOWLEDGE ACQUISITION STRATEGIES FOR EDUCATION, SSHRC ASSIGN EQUAL PRIORITY TO HIGH QUALITY RESEARCH AT ALL POINTS ON THE THEORY-PRACTICE DIMENSION WITHOUT SPECIAL EMPHASIS UPON AN EXPLICIT THEORETICAL ORIENTATION.

Canadian Curriculum Materials

The development and evaluation of curriculum materials is central to educational improvement of all kinds and, in particular, to increasing the uniquely Canadian flavour of our schools and other educational agencies. The fact that most curriculum materials in use in Canada today are of American origin and have only the most superficial "Canadianization" manicure is a serious threat to the growth of distinctive Canadian ways of life. Despite this national concern, however, the development of curriculum materials is typically not funded by SSHRC. Such projects are not considered unless they "have foreseeable theoretical importance."

Again, if "theoretical" is taken to mean generalizable (see previous section), then the problem has been created by an unfortunate misunderstanding. Producing curriculum materials unique to particular educational institutions is, of course, an operational responsibility of the institutions themselves and, therefore, does not qualify as research. But the development of potentially generalizable materials is considered to be a legitimate form of research and should be eligible for SSHRC funding. If the more technical

meaning of "theoretical" is intended, as educational researchers generally believe to be the case, then eligibility is so restrictive as to be severely prejudicial to educational improvement of all kinds and to uniquely Canadian development in particular.

Regulating the funding of such projects, however, must be approached with care. Not only should these projects have potential for generalizability, they should also include field trials and rigorous evaluation. Experience elsewhere suggests that attention be given to defining ownership of copyright of materials produced. Proposals to develop materials for the researcher's own teaching responsibilities should be ineligible unless they can clearly be shown to be generalizable.

Consideration of these points and the fact that, without modifications in funding criteria, a large segment of all Canadian educational researchers are not eligible for SSHRC support, led to the formulation of the following recommendation.

> RECOMMENDATION 4: THAT GENERALIZABLE STUDIES INVOLVING CURRICULUM DEVELOPMENT AND EVALUATION BE FULLY ELIGIBLE FOR SSHRC FUNDING AND THAT REGULATIONS BE DEVELOPED TO SPECIFY NECESSARY SAFEGUARDS.

Canadianization of Imported Knowledge

Most research results upon which Canadian education is based are American and, to a lesser degree, British and French. Considering this situation to be detrimental to our national survival, much of the thrust of this report is directed toward the need for a sharp increase in indigenous Canadian research. Despite the success of these mainstream efforts, however, it will always be important to have effective means of "Canadianizing" knowledge imported from other countries.

The problem is that research done elsewhere must be viewed as culturally specific to the locale of origin unless demonstrated to be otherwise. The validity of particular American results for Canadian application is simply not well known, yet most of our educational practices and programmes use these results as their base. What is needed is a systematic programme of replications of research

and development done elsewhere. In this way, at relatively low cost, we can have access to the best foreign research in a form which is validated or, where necessary, modified for Canadian conditions.

> RECOMMENDATION 5: THAT SSHRC ENCOURAGE THE CANADIANIZATION OF IMPORTED RESEARCH BY FUNDING REPLICATIONS AND EXTENSIONS OF RESEARCH ORIGINALLY DONE ELSEWHERE AND CANADIAN MODIFICATIONS AND FIELD TRIALS OF EDUCATIONAL PROGRAMMES, PRACTICES AND MATERIALS DEVELOPED ELSEWHERE.

The problem of situational validity is not limited to the importation of foreign research. Our distinctively Canadian cultural and linguistic diversity raises serious doubts about the applicability of certain results from one province or region to another. It seems plausible, for example, that the motivation to learn mathematics is different for female francophones in Trois Rivières than for female anglophones in Moose Jaw. Consequently, it is equally important to provide substantial support for replicating research which originates in Canada. Despite its importance, however, such research is often considered by researchers to be uncreative and hence it tends to have low status. Though we regard this view as unjustified, explicit encouragement of replication research is necessary if it is to be commonly proposed.

> RECOMMENDATION 6: THAT SSHRC ENCOURAGE THE REPLICATION AND EXTENSION OF RESEARCH DONE IN A PARTICULAR PROVINCE OR REGION OF CANADA WHERE THERE IS REASONABLE DOUBT AS TO THE SITUATIONAL VALIDITY OF THE RESEARCH IN OTHER PARTS OF CANADA.

Contract and Policy Research

The terms of reference for this study specifically asked that attention be given to the impact of contract research in Education and the relationship of contract research to SSHRC supported research. By contract research is meant research which is specifically commissioned or contracted out by an agency that requires answers to specific questions. Usually contract research

is also policy research which simply means that its purpose is to contribute to the development of policy for the institution. Where this is the case it is felt that such proejcts should not normally be eligible for SSHRC funding because the results are not generalizable. But policy research clearly need not be contract research and need not be institution-specific. Where it has generalizable application, there is every reason to consider it eligible for SSHRC support.

RECOMMENDATION 7 (a): THAT POLICY OR CONTRACT RESEARCH OF VALUE PRIMARILY TO A SPECIFIC INSTITUTION NOT BE ELIGIBLE FOR SSHRC FUNDING.
(b): THAT POLICY RESEARCH WHICH CAN BE EXPECTED TO HAVE GENERALIZABLE APPLICABILITY BE ELIGIBLE FOR SSHRC FUNDING.

A second issue which arises regarding contract research is the balance between it and generalizable research. Funding for contract research is available in large quantities from a wide variety of agencies, especially Departments and Ministries of Education and various federal ministries. At the same time, funds for generalizable research, from SSHRC or elsewhere, are so limited that the available research capacity in Canada is presently utilized largely in the service of contract research. Certainly institution-specific research is important but the present imbalance is dangerously misleading. It is easy to get the impression, from general familiarity with the educational community, that a great deal of educational research is underway. In fact, very little of it is of the generalizable sort. No single remedy can be suggested for this imbalance but the present study in total is a move toward that goal.

National Priorities

RECOMMENDATION 8: THAT, WITHOUT DIMINISHING THE IMPORTANCE OF THE PRESENT PROGRAMME OF INDEPENDENT RESEARCH, SSHRC ORGANIZE THE ESTABLISHMENT WITHIN EDUCATION OF PRIORITY AREAS FOR RESEARCH OF NATIONAL INTEREST WHICH WILL SERVE AS THE FOCUS FOR PROGRAMMATIC RESEARCH.

While Education as a total field must be considered a national priority, there are many areas of research within Education which should be singled out for priority status. The present Strategic Grants Programme of SSHRC is an expression of this view. Although concerns have been expressed about identification of priority areas, the general consensus in Education is that such focussing of research will lead to increased productivity and quality, aid in the establishment of a research tradition, and result in an improved capacity for research in Education. The continuation and expansion of the present programme of researcher-initiated projects is essential, as well, to maintain the advantages of open inquiry which exclusive emphasis on targetted research would stifle.

No recommendations for specific priority areas are presented here because the task of identifying them goes beyond the bounds of this study. It is possible, however, to specify some desirable characteristics of the identification process. Beyond that this study does contribute to the important initial phase of the process through the many suggestions for priority areas contained in the studies reported in Part II.

RECOMMENDATION 9: THAT NATIONAL PRIORITIES BE IDENTIFIED THROUGH A CONSULTATIVE PROCESS WHICH WOULD BE BROADLY BASED, NON-POLITICAL AND OPEN TO PUBLIC SCRUTINY.

The advantages of a consultative process, modelled after the present process used for the initial identification and subsequent clarification of themes, are at least threefold. It provides an opportunity to obtain the views of a large number of researchers in Education, to stimulate their interest in work of national importance, and to allay possible provincial sensitivities that might otherwise arise.

DEVELOPMENT OF RESEARCH CAPACITY

Earlier it was observed that Canadian research capacity and productivity in Education were far too low in view of the crucial importance of Education in the life of our country. The recommendations of this section propose means of building that capacity.

Research Teams

RECOMMENDATION 10: THAT SSHRC ENCOURAGE THE FORMATION OF TEAMS OF RESEARCHERS DRAWN FROM UNIVERSITIES AND, WHERE APPROPRIATE, FROM OPERATING AGENCIES TO WORK COLLABORATIVELY ON RESEARCH QUESTIONS OF MUTUAL INTEREST.

One way to foster interaction among researchers with a common interest and to enhance the quality and comprehensiveness of a programme of research is to encourage the submission of proposals by teams of researchers. Research teams have the potential of combining the contributions of several researchers who differ in disciplinary perspective or methodological expertise. These researchers need not necessarily come from the same university. For some problems, the team could be strengthened further by including practitioners familiar with the characteristics and operations of the setting of the research. As well as meeting their immediate research objectives, research teams would produce secondary benefits such as providing active, high quality training environments.

Research Institutes

Consonant with the formation of research teams, it is recommended:

RECOMMENDATION 11: THAT SSHRC ESTABLISH RESEARCH INSTITUTES AT SELECTED UNIVERSITY LOCATIONS FOR THE VARIOUS SUB-FIELDS OF EDUCATION TO FOSTER COLLABORATIVE RESEARCH AND DEVELOPMENT EFFORTS.

Research institutes or centers warrants special emphasis because of the many advantages they would provide. Probably their greatest advantage is the provision of a critical mass of experienced researchers, leading to a stimulating and creative environment over a long period of time. In addition, faculty members assigned to an institute on a full- or part-time basis would have adequate sustained time and support staff to take part actively in the

on-going research programmes and to prepare necessary research proposals for continuing future funding. Like the research teams, research institutes enable collaboration among faculty colleagues and provide an appropriate setting for the training of graduate students. In addition, they enable the effective use of visiting professors from other universities and countries.

Initially, institutes should be established at universities noted for their research strength in particular sub-fields of Education. Appropriate sites could be identified through a call for proposals. Selection criteria might include, for example, the presence of at least three active researchers, an appropriate library and an adequate computer facility. To avoid duplication, the institutes' programmes should provide for close working relationships with colleagues in university and non-university settings covering as broad a geographical area as possible.

Special Retraining and Reorientation Fellowships

Research in Education would benefit greatly from special grants made available to faculty members for upgrading research skills, and for reorienting themselves to new areas of specialization.

But such retraining and reorientation cannot realistically occur while faculty members are involved in their on-going work. The heavy professional demands of teacher training programmes and of various services to the professional field rule this out, at least during the normal academic year.

RECOMMENDATION 12: THAT SSHRC ESTABLISH A SPECIAL RESEARCH RETRAINING FELLOWSHIP PROGRAMME FOR FACULTY MEMBERS TO ENABLE THE UPGRADING OF THEIR RESEARCH SKILLS OR THE REORIENTATION OF THEIR RESEARCH SPECIALIZATIONS.

The proposed retraining fellowships are not intended to replace the present leave fellowships, but they could be modelled after them. They should be variable in length and might either supplement university-granted leave or provide full support.

Applicants would be required to specify the kind of retraining proposed. Often the plan might be to work within a research team or a research institute. Attendance at specially organized summer workshops on research skills would be another important kind of opportunity. It is suggested that two such workshops be initiated as soon as possible and that fellowship support be awarded to participants.

Seed Money

RECOMMENDATION 13: THAT UP TO $5,000 BE AVAILABLE FOR EXPENSES INVOLVED IN DEVELOPING PROPOSALS FOR SUBMISSION TO SSHRC. APPLICATIONS FOR SEED MONEY WOULD REQUIRE ONLY A BRIEF DESCRIPTION OF THE GENERAL TOPIC.

This recommendation complements the previous recommendation dealing with provisions for the retraining of faculty members. Allowable expenses should include the cost of research assistants, consultants, and typists as well as such normal items as travel, telephone and supplies. Where circumstances warrant it, seed money should also be made available to researchers who initially receive a qualified rejection so that they have the means for preparing a high quality re-submission.

Research Time Stipend

One of the major obstacles to an increase in research production is the lack of time available to many potential researchers. In recognition of this fact, SSHRC recently introduced research time stipends into its granting programmes. The purpose of these stipends is to enable scholars to devote a greater portion of their time to carrying out a specific research project by releasing them from normal teaching and administrative duties for a period of four to eight months per year and up to twelve months every three years. This four to eight month stipulation is based upon the expectation of Council

that researchers normally have available the equivalent of four months a year to devote to research.

The need for these time stipends is especially crucial in Education. The typical teaching and administrative loads in the Faculties of Education are usually heavier than those in most other faculties. The demands of summer session teaching, supervision of student teaching during the academic year, consulting activities with school districts and Ministries of Education, and in-service education of groups of practising educators all add substantially to the normal teaching load. As a result, unless the load is reduced by buying out time, it is unrealistic to expect much increase in the volume of research in Education.

RECOMMENDATION 14: THAT SSHRC EXTEND ITS PRESENT RESEARCH TIME STIPEND PROGRAMME TO THE POINT THAT IT BECOMES COMMON FOR QUALIFIED RESEARCHERS TO RECEIVE RESEARCH STIPENDS FOR BUYING OUT TEACHING TIME DURING THE NORMAL ACADEMIC YEAR.

Research Communication

A vital aspect of a productive research community is the extent to which communication among its members takes place easily, quickly and effectively. Included must be provision for interpersonal exchange of ideas, for group meetings, and for dissemination of research results. In recent years a great deal of effort has been expended in developing this important element of the infrastructure in Education. In particular, a good many learned associations have been established and, through them or otherwise, a number of research-oriented journals have been developed. These provisions for communication are scarcely adequate for the present low level of research activity, and certainly will require substantial upgrading if they are to make their essential contribution to future development of research in Education. This is especially so in view of our distinctively Canadian problem of large distances and small population. Moreover, in recent years additional isolation is resulting from the drying up of university travel budgets.

Two approaches to the problem seem indicated. One is the further development of the conventional ingredients of an adequate network: availability of travel funds, sponsorship of conferences and additional assistance to research journals. An example of what is needed for journals is that one of our major publications, the Canadian Journal of Education/Revue Canadienne de l'Education, now has such a long publication lag time that its usefulness is diminishing. The lag is sixteen months which corresponds to five issues.

The second approach is to explore actively some of the promising innovative approaches to communication. This would include such possibilities as adaptations of some of the distance learning methodologies, development of conferencing techniques using media such as television, computers and satellite transmission, and expanding the capacity of traditional journals with computerized retrieval of microfiche.

RECOMMENDATION 15: THAT SSHRC PROVIDE INCREASED SUPPORT FOR THE DEVELOPMENT OF AN IMPROVED COMMUNICATIONS INFRASTRUCTURE THROUGH TRADITIONAL MEANS SUCH AS TRAVEL, CONFERENCES AND JOURNALS AND ALSO THROUGH THE EXPLORATION OF INNOVATIVE MEANS.

Non-University Researchers

One of the specific terms of reference of this study was that consideration be given to the status of non-university researchers. Presumably the question is whether they should be eligible for funding.

This does not seem to be an issue for the researchers we have talked with. The general view, however, reflects the principle that expenditures of public funds should be governed by cost-effectiveness considerations. If non-university researchers can add important dimensions to the available research capacity of Canada at competitive costs, they should be eligible for support.

These cost-effectiveness considerations must not be narrowly restricted to the actual research output, but must include secondary benefits. A research project based in a university contributes a great deal more to the long term goals of research than just the project results. It helps develop

a research tradition, it stimulates other faculty members, it keeps the professor's teaching current and vital, it provides research support and apprenticeship opportunities for graduate students and it contributes to the continuing research support system including libraries, computer facilities, editorial services, and the like. In short, each funded project located in a university adds substantially to the research capability of a permanent institution.

RECOMMENDATION 16: THAT NON-UNIVERSITY RESEARCHERS BE ELIGIBLE TO RECEIVE SSHRC FUNDING WHEN THEIR POTENTIAL CONTRIBUTION IS COST-EFFECTIVE IN TERMS OF BOTH RESEARCH RESULTS AND SECONDARY BENEFITS.

Graduate Student Support

SSHRC presently offers special M.A. scholarships, including the Queen's Fellowships, which are available to exceptionally promising Canadian students in the social sciences and humanities. Unfortunately, the eligibility criteria for these scholarships are such that promising researchers in Education are usually ruled out. This is because the rules require that students be in their fourth year when they apply and the grant is applicable for the following year when they must be enrolled full-time in a M.A. programme. The problem is that almost all M.A. programmes in Education require teacher training and experience prior to admission. This practical dimension in no way diminishes the research potential of a student; indeed it provides valuable working experience and knowledge of the milieu in which their research will actually be conducted.

RECOMMENDATION 17: THAT SSHRC ESTABLISH SPECIAL M.A. EDUCATION SCHOLARSHIP GRANTS WITH ELIGIBILITY RULES APPROPRIATE TO CONDITIONS IN THE FIELD OF EDUCATION.

In the training of future researchers it is important that the formal research requirements of graduate programmes be supplemented by direct apprenticeship in research projects. At present this is often not possible because so little research is underway. Even though this part of the problem

may change substantially in the future, a financial obstacle remains. Research assistantships in SSHRC-funded projects carry remuneration limited to a figure set nationally by SSHRC. The problem is that in many universities this salary is not competitive with other forms of graduate student support such as teaching assistantships. As a result many students, even though planning a research career, must pass up research assistantship opportunities in favour of higher paying alternatives. Since graduate students in Education are much older than average and commonly have family responsibilities, financial considerations often must govern. Accordingly, it is recommended:

> RECOMMENDATION 18: THAT SSHRC ESTABLISH STUDENT RESEARCH INTERNSHIPS AT RATES OF PAY EQUAL TO THOSE OF TEACHING ASSISTANTSHIPS AT THE UNIVERSITY THE STUDENT ATTENDS, AND THAT THESE INTERNSHIPS BE INCLUDED IN PROJECT PROPOSALS.

STRUCTURE AND PROCEDURES

Reorganization Within SSHRC

RECOMMENDATION NO. 1 called for Education to be identified by SSHRC as a high priority area for furthering the national interest. For implementation of this and the other recommendations of this study, certain modifications of the present organization would seem to be required. These are described as follows:

> RECOMMENDATION 19: THAT EDUCATION, AS AN AREA WHOSE FURTHERANCE IS IN THE NATIONAL INTEREST, BE RECOGNIZABLY DISTINGUISHED AS A UNIQUE FIELD OF STUDY.

> RECOMMENDATION 20: THAT SEPARATE BUDGETARY PROVISIONS BE MADE FOR THE FIELD OF EDUCATION.

RECOMMENDATION 21 (a): THAT A SEPARATE ADJUDICATION COMMITTEE BE CREATED FOR EDUCATION WITH MEMBERSHIP DRAWN FROM THE VARIOUS SUB-FIELDS OF EDUCATION, AND

(b): THAT A SEPARATE PROGRAMME OFFICER FOR EDUCATION BE APPOINTED.

SSHRC Jurisdiction

A troublesome problem for some sub-fields of Education has been confusion about the appropriate granting agency to which a particular proposal should be submitted. The problem arises because, though most Education proposals are within the definition of SSHRC responsibility, some come under NSERC, some under MRC, and still others under Health and Welfare. Guidelines have been derived to separate these jurisdictions, but they are not widely understood and are frequently criticized as lacking academic validity for Education. Despite efforts on the part of the granting Councils to coordinate actions on proposals in marginal areas, the problem remains. Of the various solutions which have been proposed the following appears to offer the cleanest solution.

RECOMMENDATION 22: THAT ALL PROPOSALS DESIGNATED BY THE RESEARCHER AS "EDUCATION" BE CONSIDERED ELIGIBLE FOR SSHRC FUNDING.

Qualifications of Assessors

RECOMMENDATION 23: THAT THE PRIMARY QUALIFICATIONS FOR ASSESSORS USED IN THE ADJUDICATION OF EDUCATION PROPOSALS BE PROMINENCE AS CANADIAN EDUCATIONAL RESEARCHERS.

If Education is handled through separate structures within SSHRC, it should be possible to identify assessors in Canada with qualifications which are uniquely appropriate for Education proposals.

Turnaround Time

Another difficult problem concerns the long time lapse often experienced between submission of a proposal and notification of the assessment outcome. While improvement in many cases will automatically result if jurisdictional questions are simplified, the whole problem does warrant attention. The recommendation to this effect must nonetheless be read in the context of acknowledging that rigour and equity in an adjudication system must be given priority over speed.

RECOMMENDATION 24: THAT SSHRC REDESIGN ADJUDICATION PRACTICES TO PROVIDE THE SHORTEST POSSIBLE TURNAROUND TIME FOR PROPOSAL CONSIDERATION, SUBJECT ONLY TO PARAMOUNT CONCERN FOR RIGOUR AND EQUITY.

CONCLUSION

The central thrust of this study is that in the national interest a major expansion of educational research in Canada is required. To specify the actual budgetary amounts required to meet the need is difficult in the extreme because most of the pertinent variables cannot be quantified. The problem is simplified somewhat through the realization that the need for research is sufficiently great that the extent of the need, *per se*, is not the limiting factor in the foreseeable future. Rather, natural limits on increased funding should be set by the rate at which it is logistically possible to implement the expansion recommended in this report.

Viewed this way the problem becomes somewhat more manageable. Assuming that the broadened definitions of research proposed in this report are accepted and assuming that the reorganization proposals, if accepted, would take about a year to implement, it is our judgement that an additional sum of $1.5 million could be solidly assimilated within the first year of implementation. After that, budgetary amounts of three million dollars a year above the present base of one million would seem appropriate. At the end of five years from implementation it would be advisable to evaluate the programme for a fresh determination of its future.

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PART II: STUDIES OF SUB-FIELDS OF EDUCATION

The review of the ten sub-fields of Education identified for the present study are provided in the next ten chapters. Together, they provide a perspective for the recommendations presented in the previous chapter. Separately, they provide a description of research and research issues particular to each area. As well, each chapter contains several suggestions of priority areas for research of a national interest in Education and which can serve as the focus for programmatic research. Too numerous to include in PART I, the suggestions provide important direction for research in Education.

Chapter 3

ADULT EDUCATION

William S. Griffith
Pearl J. Roberts*

Adult education is often described as an emerging field of university study and research because its formal development began much more recently than did elementary, secondary and higher education. Many relatively well-informed Canadians remain uncertain of the dimensions of the field because they have encountered one or a few aspects of it and make the mistake of assuming that the whole is composed of nearly identical parts -- a quite erroneous assumption. Because of this confusion regarding the nature of the field, there is a corresponding lack of knowledge and appreciation of the research activity within it. The purposes of this report are to clarify the nature of the field of adult education, particularly as an area of scholarly activity, to describe the range of researchers and research undertaken either within it or in contiguous areas, and to identify actions which might be taken by the Social Sciences and Humanities Research Council to increase the quantity, quality and utility of Canadian adult education research.

DEFINING ADULT EDUCATION

Adult education has been defined variously by international, national, provincial, and non-governmental bodies as well as by individual scholars.

In 1976 UNESCO stated "The term 'adult education' denotes the entire body of organized educational processes, whatever the content, level and

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methods, whether formal or otherwise, whether they prolong or replace initial education in schools, colleges and universities as well as in apprenticeship, whereby persons regarded as adult by the society to which they belong, develop their abilities, enrich their knowledge, improve their technical or professional qualifications, or turn them in a new direction and bring about changes in their attitudes or behaviour in the twofold perspective of full personal development and participation in balanced and independent social, economic and cultural development; . . ." (Canadian Commission for UNESCO, 1980: p. 3).

The organization for Economic Cooperation and Development (1977: p. 7) said that

> Adult education refers to any learning activity or programme deliberately designed to satisfy any learning need or interest that may be experienced at any stage in his or her life by a person who is over the statutory school-leaving age and whose principal activity is no longer in education. Its ambit thus spans non-vocational, vocational, general, formal or non-formal studies as well as education with a collective social purpose.

Liveright and Haygood, of the Centre for the Study of Liberal Education for Adults, provided a process oriented definition (1968: p. 2):

> Adult education is a process whereby persons who no longer attend school on a regular and full-time basis (unless full-time programmes are especially designed for adults) undertake sequential and organized activities with the conscious intention of bringing about changes in information, knowledge, understanding or skills, appreciation and attitudes; or for the purpose of identifying and solving personal or community problems.

Although adult education has been a field of practice as long as human adults have been assisting one another to learn, public awareness of adult education as a discrete field of human endeavour is still relatively limited. As is the case with other fields of practice, the knowledge base begins to develop almost imperceptibly as reflection and intuition interact until it is recognized that some individuals perform more effectively than others. Programmes of apprenticeship evolve informally and slowly. The knowledge becomes codified and managed by a group of individuals who are aware of their role in maintaining and improving both the base of knowledge and the practice.

Coolie Verner, long-time professor of adult education at The University of British Columbia, noted that the inability of some educators to accept

adult education as a distinct field and discipline stems from their narrow view of the phenomenon of education. He observed that "Since schools of education are principally concerned with the preparation of professional leadership for, and the advancement of knowledge about the traditional educational institutions in society, education is equated with schooling, and learning with education" (1978: p. 133).

INSTITUTIONAL DIMENSIONS

Individuals seeking to comprehend the institutional dimensions of the education field often confuse a single institutional form or a small number of diverse kinds of institutions with the full range of the field. The Organisation for Economic Co-operation and Development (OECD) produces a "Taxonomy of Adult Education Agencies" that clarifies the diversity of the kinds of institutions providing adult education to lesser or greater degrees (OECD, 1977: p. 39):

Taxonomy of Adult Education Agencies

1. Government or local government institutions existing primarily or exclusively for an educational purpose (e.g., residential colleges, adult education centres).

2. Government or local government institutions including an educational aim in their programmes (e.g., ministries of health and agriculture, local social welfare services).

3. Independent institutions existing primarily or exclusively for an educational purpose and also in receipt of financial support from public funds (universities through extension or adult education department).

4. Independent institutions including an educational purpose among their aims and in receipt of financial support from public funds.

5. Independent institutions existing primarily or exclusively for an educational purpose and not in receipt of financial support from public funds (e.g., commercial colleges and correspondence schools).

6. Wholly independent institutions including a specific educational purpose among their aims or using education as one of the means of achieving their aims (e.g., church organizations, trade unions).

8. Auxiliaries of education (e.g., museums and libraries).

9. The mass media, insofar as they consciously fulfil an educational function.

10. Voluntary local associations including an educational aim among their activities (e.g., clubs, hobby societies).

Such diversity is difficult to grasp by those educators who have been conditioned to think of education as being synonymous with schooling and who have dealt with the predominant institutional forms (schools, colleges and universities) exclusively. The fact that more adults are pursuing systematic education in other than the traditional educational institutions not only accounts for the difficulty non-adult educators have in trying to grasp the institutional dimensions of the field but also explains why the collection of a complete set of baseline data on participation, participants, programmes and providers poses such a difficult challenge.

ADULT EDUCATION FIELD FOCI

Although the knowledge content of the field is most often categorized according to programmatic considerations such as the type of sponsoring institution, the specific audience, or the specialized knowledge to be conveyed, from an adult education disciplinary perspective, such classifications are dysfunctional in that they emphasize practical over theoretical considerations. Verner's suggested categories intentionally minimize practical considerations and emphasize fundamental theoretical groupings: (1) adult learning; (2) psychology of adults; (3) physiology of aging; (4) adult instruction; (5) instructional processes; (6) instructional devices; (7) the client system; (8) the organizing system; (9) the social setting; (10) the role of adult education; and (11) historical foundations (1978: p. 138). These categories define both the primary areas of content and major foci of research.

GRADUATE STUDY

The first undergraduate course on adult education in Canada was taught in 1935 at Sir George Williams College by Kenneth Norris. Although J. Roby Kidd taught the first graduate level course in 1951 at the Ontario College of Education, it was not until 1961 that Coolie Verner was named the first full-time professor of adult education in the first full graduate programme of adult education at The University of British Columbia. Graduate programmes of adult education, some designated by that name and others by titles such as extension education, have been established at ten additional universities: Alberta, Dalhousie, Guelph, Manitoba, McGill, Montreal, Saskatchewan, Toronto (Ontario Institute for Studies in Education), Victoria, and St. Francis Xavier.

The most comprehensive survey of degree programmes for training professional adult educators was conducted by Griffith and Cloutier in 1970-71. Preparing full-time researchers was not identified as the primary purpose of any of the programmes. Instead the most commonly named career goal at the doctoral level was that of adult education administrator, a finding entirely consistent with the relatively low research emphasis and productivity of the field.

Professional preparation for individuals seeking either to enter the field or for individuals already in the field who wish to upgrade themselves differs from professional preparation programmes in most other areas. Verner and associates noted that "Professional education in adult education is usually offered on the graduate level which attracts individuals from the field so that it tends to be post- rather than pre-vocational education. The students enrolled for graduate study tend to be older than is the case in other disciplines with those receiving the doctorate averaging 36 to 40 years of age" (Verner and Associates, 1970: p. 47).

RESEARCH COMPILATIONS

Canadian efforts to compile and analyze both degree and non-degree adult education research have been led by James Draper, Associate Professor

of Adult Education at the Ontario Institute for Studies in Education (Draper: 1970, 1974, 1978, 1981; Draper, Niemi and Touchette, 1969; and Draper and Yadao, n.d.). Draper and Yadao conducted a survey of degree research and reported nineteen studies completed and thirty in progress during 1969 (Draper and Yadao: n.d.). The Canadian Association for Adult Education, the Ontario Institute for Studies in Education, and the Institut Canadien d'Education des Adultes jointly published an inventory of non-degree adult education research in Canada conducted in 1969. The survey questionnaire was mailed to 1676 institutions, associations and agencies in all parts of Canada.

Nine types of respondents reported their providing of financial support to underwrite adult education research: universities, voluntary associations, federal government, community colleges, school boards, provincial crown corporations, federal crown corporations, and business and industry (p. 67).

In 1974 Draper produced a study of thesis research conducted at the University of Toronto between 1900 and 1970 that related to adult education. He found relevant research studies in the numbers indicated for each of the following departments:

Education	66 (including 19 from adult education)
Social Work	37
Psychology	29
Sociology	6
Library Science	4
Geography	3
Anthropology	1
Economics	1
English	1
History	1
Music	1
Planning	1
Political Science	1

Draper's views on adult education research conducted in Canada are presented in the 1978 book of readings on Canadian Adult Education. He noted that the descriptive method of research is most widely employed and

that experimental and theoretical research is scarce. With regard to who is doing the research, Draper observed:

> Researchers represent a very wide range of subject matter specializations with very few reporting that the subject matter specialization in the last university degree which they received was actually in the area of adult education. Furthermore, most of the non-degree research in adult education which is being conducted in Canada is being done by persons who have not had formal training in research methodology (pp. 129-130).

Most recently Draper (1981) has identified 326 magistral and 61 doctoral theses completed in Canada up to and including 1977. Draper notes that "The study was entirely dependent upon the information submitted by the seven participating Canadian universities" (1981: p. 1). The seven universities were University of Alberta, University of British Columbia, University of Guelph, Université de Montréal, University of Saskatchewan, St. Francis Xavier University and the Ontario Institute for Studies in Education (University of Toronto). The degree programmes in the several universities were Ph.D., Ed.D., M.A., M.A.A. (Master of Arts in Andragogie), M.C.Ed. (Master of Continuing Education), M.Ed., M.Sc. and M.Sc.Ag. (Master of Science in Agriculture) (1981: p. 2).

Draper categorized fifty-six doctoral dissertations in adult education completed at the universities of British Columbia and Toronto in seven categories with one dissertation which did not fit any of the categories (1981: p. 68).

Generic Research Design	Number	Percentage
Historical	6	11%
Model/tool building/testing	5	9%
Library	3	5%
Evaluation	3	5%
Grounded Theory/Phenomenological		
Experimental	2	4%
Other	1	2%
Survey	34	61%

Draper was also able to identify master's theses dealing with adult education that had been written at other universities. In sum, he identified 451 master's theses completed in ten Canadian universities through 1980 (1981: p. 141), and 106 doctoral dissertations from five Canadian universities through 1980 (1981: pp. 157-158).

THE NATURE OF ADULT EDUCATION RESEARCH

In examining the body of adult education research that had been conducted in the United Kingdon prior to 1970, Edward Hutchinson, long-time executive officer of the National Institute of Adult Education observed:

> The number of studies that can be considered as experimental research designed to test particular hypotheses is very small. There is, however, a larger body of works which attempts, within varying degrees of rigour, to clarify, quantify or evaluate the characteristics of situations, participants and non-participants, methods, organization, and administration (Hutchinson, 1970: p. 1).

Yet he noted that the remarkable aspect is not that much of the adult education research literature is "limited, sporadic and uncoordinated," rather, given the restricted number of full-time personnel and the financial limitations, it is much more remarkable that there has been so much reflection and recorded comment and a number of studies of substance (1970: p. ii).

In 1974 the British National Institute of Adult Education published Research and Adult Education, a compilation of abstracts and summaries principally of magistral and doctoral theses completed since 1975. The author, Alan Charnley, classified the 191 documents in the following categories:

Particular Movements and Organizations	57 studies
Participation	44 studies
Educational Methodology	34 studies
Theory of Education	15 studies
Historical and Descriptive Surveys	12 studies
Organization and Administration	9 studies
Staffing	9 studies
Guidance and Counselling	6 studies
Curricula and Courses	5 studies

This listing reflects a well-established tendency to emphasize the importance of particular institutions and to be concerned with the phenomena of participation since, in voluntary educational activities, the number of continuing learners is the most important factor in determining the continuation of both programmes and the provision of bodies. Beyond that survival concern, adult educators quite understandably show persisting interest in the methods and theory of education.

RESEARCH TRENDS

Research in adult education as in other areas does not develop evenly. Instead, topics and methods of study enjoy periods of popularity and periods of relative neglect. In Canada two of the historical treatments of single institutions of adult education are Fitzpatrick's 1920 treatment of the Frontier College and Coady's 1939 report of the Antigonish movement. Such documentary reports were produced in the United Kingdom, the United States and Canada in considerable number and this form probably continues to constitute the largest single category of types of studies, though its popularity is not so great as it has been.

In the 1930's Sandiford's landmark study, which attempted to present a comprehensive picture of adult education in each province, was the first major effort to draw a map of adult education activity in Canada. It served to identify the diverse institutional providers and to present an overview of the myriad of activities which could appropriately be called adult education.

Since 1935 a number of other studies of institutions sponsors and of participants have been undertaken in Canada, but there is still no comprehensive regularized system for the periodic collection of such data.

In the 1960's adult learning and development gained increasing popularity. Tough, who is now a professor of adult education at the Ontario Institute for Studies in Education, was a doctoral student at the University of Chicago in the early 60's, and his dissertation focussed on self-directed learners. He has examined the incidence and extent of self-directed learning in a number of countries ranging from Oceania to Africa. His 1979 research on self-directed learning has gained international visibility and is cited regularly in publications of adult educators in many parts of the world.

In more recent years there has been some tendency for adult education researchers to employ increasingly sophisticated methods of data collection and analysis, but this increased sophistication in quantitative empirical analysis has not been marked by a correspondingly sophisticated development.

Although practicability is a vital consideration, the action orientation of most adult educators has been identified as an impediment to the development of the field. Bernbaum (1980) asserts that most adult education practitioners

are psychologically unsuited to conducting research. The small number of theoretically and research oriented adult educators accounts for some of the problems in the development of suitable analytical concepts and theories, difficulties which are common to educational research in general. Boreham (1980) stresses the importance of training adult educators to appreciate the scope and relevance of research as an essential element in programmes for the development of professional adult educators conceptually and theoretically.

Conceptual frameworks for social and educational change are of particular interest currently to those European adult educators who believe the most important function of adult education is to contribute to the redistribution of resources (Hoehielm and Rubenson, n.d.). In Europe both equilibrium and conflict theories of change are considered, but in North America, Marxian and other conflict theories have been largely ignored by adult educators (Paulston, 1977). Although the use of an equilibrium theory perspective fosters unity in the field, the absence of any consideration of the possible applicability of a conflict theory sets limits on the richness of the consideration of the phenomena theoretically.

A brief recapitulation of trends in adult education research reveals a strong shift from emphasizing historical and descriptive studies to a highlighting of participation studies and the examination of the characteristics of adult learners. Phenomenological and action research methods are favoured by some investigators while others argue that established research methods are frequently misused and that great benefits would be obtained by upgrading the quality of research which employs traditional methods. Each approach has its appropriate application, and encouraging one to the exclusion of the other would produce a one-sided perception of the phenomena of adult education.

ADULT EDUCATION RESEARCH ORGANIZATIONS AND LITERATURE

Although adult education researchers show some interest in affiliating with adult-education oriented, special-interest groups in major educational research organizations, in the last quarter-century groups of adult education researchers have established their own associations.

Although adult educators are able to submit their manuscripts for consideration for publications in almost all of the educational journals, several research-oriented journals are exclusively concerned with adult education. The journal with the largest circulation is Adult Education, a quarterly published by the Adult Education Association of the United States. No comparable journal is produced in Canada, although the Canadian Association for Adult Education publishes a quarterly magazine, Learning. Convergence, the quarterly journal of the International Council for Adult Education, is produced in Toronto and is devoted largely to the presentation of essays and accounts of individuals' experiences and beliefs. In general, Canadian adult education researchers who wish to report their research and to bring it to the attention of the largest number of adult education researchers submit their manuscripts to the American journal, Adult Education.

Canadian researchers in adult education are likely to belong to the American Educational Research Association, the largest organization of educational researchers in the world. The importance of adult educators in this Association has fluctuated over the last thirty years. In 1950, 1953, 1959 and 1965 the June issues of the Review of Educational Research were devoted entirely to adult education. A change in editorial policy has resulted in a sixteen year hiatus. The most comprehensive and widely known summary and synthesis of adult education research is An Overview of Adult Education Research, which was written in 1959 by a team of researchers at Columbia University under the leadership of Edmund Brunner.

Paul Belanger, executive of the Institut Canadien d'Education des Adultes, provided an anlysis of adult education research conducted in Quebec between 1960 and 1969. He identified three types of research projects:

(1) Those research papers trying to relate the educational action to consequent behaviour of participants in specific social milieux, and consequently to analyze the interaction between education and development.

(2) The studies made either on the learning process or on the small groups dynamics.

(3) The short-term studies like the identification of educational needs; the clientele analysis; the evaluation as well as the feasibility studies (Belanger, 1973: p. 20).

Belanger found one-third of the studies were in category 1, one-tenth were in category 2 and the balance, 57%, in category 3. For the ten-year period he concluded: "The main trend of research on adult education in Quebec is then for projects showing an increased methodological systematization but without in general, a similar evolution in the theoretical effort" (Belanger, 1973: p. 21).

Cross explained that there are at least three reasons why theory building in adult education has proven so difficult:

(1) Most adult educators have a marketplace orientation, which tends to preclude the investment of much time in searching for explanations of complex phenomena.

(2) The field of adult education has produced few scholars. Graduates find lucrative administrative or teaching positions in which research is not part of the job.

(3) Adult education is a multidisciplinary applied field in which behavior is influenced by large numbers of variables (1981: pp. 110-111).

Research on Participation

Research on participation has been a persistent emphasis area in adult education possibly because participation is rarely compulsory.

Another reason why the phenomena of participation have been a primary focus of adult education research is that programmes often fail to attract the audience they were primarily intended to serve.

Persistent Non-Participants

In its report, Learning Opportunities for Adults, O.E.C.D. identified two categories of groups who do not participate in adult education in proportion to their numbers. The first category includes groups with economic, geographic and social disadvantages:

(1) unemployed young adults, including premature school leavers;
(2) certain rural populations;
(3) migrant workers;
(4) immigrants (foreign workers);
(5) aged;
(6) urban poverty groups;
(7) unskilled and semiskilled workers;
(8) unemployed and under-employed workers with little education;
(9) unemployed and under-employed adult workers;
(10) those experiencing linguistic problems (O.E.C.D., 1977: p. 32).

Although all the groups in this category participate at a much lower rate than groups who do not have these disadvantages, there is no reason to believe that a simple expansion of existing programmes would have a positive effect on their participation rate.

The second category of groups consists of those who are reachable, i.e., inclined to participate if particular obstacles were removed:

(1) Those who would like to aprticipate but lack the requisite financial or other means (including transport);
(2) Those who are not individually conscious of wishing to participate but would participate as members of a community, for example, in a resident's association or amenity group;
(3) Those who would like to participate but lack the appropriate information about what is available and how to apply for admission;
(4) Those who are afraid of the possible reactions of their employers and the implications for the job security (1977: p. 34).

Data Bases

Describing the dimensions of Canadian adult education is a formidable task which few scholars have attempted. The first survey, described by its chief author as "incomplete and imperfect," was reported in 1935 by Peter Sandiford, Professor of Educational Psychology and Director of the Department of Educational Research in the Ontario College of Education, University of Toronto.

No comparable nationwide study of adult education in Canada has been undertaken in the intervening forty-six years. However, in 1976 Vaniewica, under the sponsorship of the Ontario Educational Communications Authority, conducted a survey of the demand for part-time adult learning in Ontario.

The data base for adult education is not much better than it was in 1935. So little attention has been paid to the types of data needed to describe the scope and extent of activity and the nature of participants that there is not yet agreement on what data should be collected, despite the commendable efforts by Statistics Canada (1973, 1974, 1975a, 1975b).

Forty years ago the Minister of Education in British Columbia asked the members of the Public Library Commission to make a general study of the facilities for adult education in the province and to submit suggestions and preliminary recommendations for its development (Lidster and Associates, 1942: p. 1). After assessing the adequacy of adult education provision in the Province, the members of the study group made a central recommendation: "The essential requirement for any successful program of adult education in British Columbia is a directing, controlling, coordinating, unifying, Centralized Authority."

PROVINCIAL STUDIES OF ADULT EDUCATION

During the last decade the provinces have become increasingly interested in studying adult education and in formulating policy for its support and operation. While the 1960's can be viewed as a decade of federal initiatives, such as the passage of the Technical and Vocational Training Assistance Act of 1960 and the Adult Occupational Training Act of 1967, the 1970's were years of growing provincial interest and activity (Selman, 1981). The 1974 Survey of British Columbia Community Colleges, the Survey of Non-Credit Continuing Education in Ottawa conducted in the same year and the 1975 Report on the Education of Adults for the Federation of Catholic School Boards in Quebec are examples of provincial research which, while not particularly impressive as examples of rigorous research, are of significance because they served as the basis for the formulation of recommendations and legislation.

Alberta issued a major statement on adult education in 1972, A Future of Choices -- A Choice of Futures (Alberta Commission on Educational Planning, 1972). Although this document encompasses the total educational response to predicted social and economic trends, considerable attention was given to the

place of adult education. While it was suggested that existing organizations should incorporate responsibility for further education into their mandate, it was pointed out that colleges, universities and community schools should have clearly differentiated functions. Integrated coordination was emphasized as a high priority.

A concern for coordinated planning is at the heart of Alberta's approach to the provision of adult education. As the 1972 report was being released, work was already under way to develop local further education councils, a new form of inter-agency coordinative committees funded by the provincial government (Long, 1976). Policies have been adopted to govern the operation of the councils, confirming their role in adult education provision (Alberta Advanced Education and Manpower, 1979). Although this innovative approach is one of the newest concepts in enlarging educational opportunities at the community level and even though the guidelines for the further education councils professes a commitment to research, little is known about their effectiveness and their advantages and disadvantages in comparison with other approaches to coordination.

Provincial initiative in adult education was also stimulated by the 1972 UNESCO report, Learning to Be, which generated world wide discussion of adult education policy needs. The Province of British Columbia responded with the Report of the Committee on Continuing and Community Education in British Columbia (British Columbia Ministry of Education, 1976), which advocated assigning a higher priority to, and providing increased government support for, adult education, arguing that society as well as the individual adult learner stands to benefit from the investment.

A burst of provincial activity recurred in 1981 when Nova Scotia, Ontario and Quebec all released reports on adult education.

The Nova Scotia Department of Education commissioned a one-man study of adult education. This report emphasizes the need for improved coordination (Stewart, 1981). The infra-structure is described as "top heavy in the sense of lacking sounding boards and contacts with everyday people" (p. 2) This report recommends the formation of community councils to enable the system to respond more effectively to local and regional needs. The second pressing need identified in the report is for improved dissemination of information about adult education opportunities.

Continuing Education: The Third System (Ontario Ministry of Education and Ministry of Colleges and Universities, 1981) was distributed throughout Ontario as a discussion paper, conceptualizing adult education as a third system of educational provision, complementing the elementary-secondary system and the post secondary system. This discussion paper does not propose recommendations; instead, it poses a list of issues to be resolved after public discussion.

In Quebec, a series of regional study sessions preceded the release of Adult Education in Quebec: Possible Solutions (Québec Commission d'Etude sur la Formation des Adultes, 1981), which describes an organizational model to foster the aims of accessibility, democratization, and the sharing of knowledge. The establishment of a single controlling body, not a separate department of adult education but a para-governmental structure, is proposed. This central administrative body would be responsible for adult education policies and supervision of regional centres.

Across Canada interest is increasing in rethinking the role of the provinces in adult education provision. There is dissatisfaction with the current state of affairs and a desire to formulate a more systematic approach. Some provinces have progressed to the stage of implementing innovative structures while others are in the midst of reconsidering their programmes and public preferences. An examination of the reports that are steering the future of adult education in Canada reveals a heavy emphasis on the assessment of public opinion and, with the exception of Alberta, little overt consideration of organizational practices elsewhere or the relevant adult education literature.

Major decisions, such as the choice of colleges as the primary provincial instrument for providing adult education, are being made on the basis of scanty evidence and reasoning that may be quite limited. While the sense of urgency to develop policies is understandable and in some sense commendable, the repercussions of poorly formulated decisions may be formidable. The assignment of roles to institutions, the establishment of new structures and the adoption of operating procedures all require careful research if effective and efficient delivery systems are to be founded and maintained.

RESEARCH IN PROVINCIAL PROVISIONS

Research dealing with the nature of adult education provision in a single province or comparing provincial systems is rare but has been begun. Byrne (1981) prepared a report on three public policies (further education policy, consortium policy and community school policy), each of which affects the provision of adult education opportunities in Alberta. He asked three questions about each policy:

1. Does the policy integrate one or more manifestations of continuing education within a particular pattern of coordination and control?
2. Does the policy rationalize offerings by reducing duplication?
3. Does the policy maximize the benefits of continuing education at the same time minimizing costs? (1981: p. 4).

After examining the policies, including their funding arrangements, Byrne called for a rethinking of the potential conflicts among the policies, stating, "Next September several towns . . . could have within their boundaries, a Further Education Coordinator, a Consortium Director, and a Community School Coordinator, all intent on extending continuing education services within the same constituency. This might produce more coordination than those communities can endure" (1981: p. 35). If those involved are uninformed about the effects of various policies, improving coordination can lead to new conflicts and to a decrease in efficiency as provincial funds are used to underwrite the costs of competing coordinative mechanisms.

Studies of adult education organization are generally confined to a single province, a single institution or a single type of institution. Professor Hayden Roberts of the Faculty of Extension of the University of Alberta is completing a landmark study which compares the organization of adult education in Alberta with the organization in Quebec.

Canadian studies of systems for providing adult education programmes at the community level, in which institutions cooperate in determining what learning opportunities will be provided and by whom, are rare. Provincial support is supplied most commonly to a given kind of institution for conducting specific types of programmes. Such cooperation and coordination as may occur is the result of initiative taken by the director of one of

the sponsoring institutions, who may perceive advantages to all of the cooperating institutions and to the adult learners in the region.

In examining the coordination of programmes, personnel and services in adult education, Griffith (1980) concluded that voluntary coordination is unlikely to emerge in more than a few isolated cases. He predicted that if a coordinated system of adult education provision is to be developed, it will result from legislation that rewards those agencies engaged in cooperative arrangements and denies support to those which insist on working in solitary fashion. A similar viewpoint is presented by Hutchinson (1981).

ATTEMPTS TO DEFINE RESEARCH PRIORITIES

Various individuals and groups have attempted to identify the research that is most needed in adult education (British Columbia Ministry of Education, 1980; Brunner and Associates, 1959; Knox, 1977; Kreitlow, 1964). They have not, however, revealed the line of reasoning which they employed in setting their priorities. Accordingly, there does not appear to be a generally accepted process for setting research priorities for adult education, a process which for the most part appears to have been largely intuitive. Given the factors which have been identified by Knox (1977) and Verner (1978) as influencing the choice of topics selected for research by graduate students and other researchers, it is apparent that the selection is determined only partly by an assessment of lacunae in the knowledge base of the field. Accordingly, even those documents whose authors aspired to set priorities for research do not provide a systematic procedure for doing so and, hence, anyone attempting to engage in a process of priority setting must first develop the logic of justification afresh rather than adopting an already established heuristic. Kidd's most recent paper on needed research, "Research Needs in Adult Education" (1981), identifies an abundance of research opportunities but provides scant guidance for determining how priorities can be set systematically. Nevertheless, he favours macro- over micro-studies.

Adult education researchers have been inclined to work at the micro level rather than at the macro level. They have examined the relationships between instructors and learners in individual classes much more frequently

than they have attempted to deal with the operation of the entire institution within its community and with regard to common institutional problems. The O.E.C.D. report, Learning Opportunities for Adults, claims that the financing of adult education has been ignored for the most part by researchers. Because of the absence of detailed information on the present scale of expenditures and the means used for financing programmes, no province or nation seems to have complete information on the costs and magnitude of adult education in its area. In the absence of such information, policy makers are sufficiently informed to enable them to plan and provide for a financial policy that is optimal for supporting adult education provision by both governmental and non-governmental organizations at the community level.

DATA NEEDS

Because adult education is provided not by a single institutional form such as schools for elementary and secondary education, and colleges and universities for post-secondary education, the statistical base essential for describing the nature and extent of adult participation in formally organized educational programmes in Canada remains unknown. Fragmentary data on adult registrations and enrollments exist for some school, college and university programmes, but little attention has been paid to developing a systematic data collection process and to specifying the nature of the data to be collected. The Program Services Division of the Post-Secondary Department of the British Columbia Ministry of Education has called attention to a part of the need (1980: p. 6):

> There has been a steady increase in the number of part-time adult students at the post-secondary level. Projections indicate an acceleration of this trend in the 1980's. Thus, in an era of retrenchment and shift in the composition of post-secondary students, more refined and disaggregated data will be required to reveal the social and demographic characteristics of the client population. Qualitative and quantitative data of both part-time and full-time students are required. Studies carefully defining specific data needs would be beneficial.

DESCRIPTIVE STUDY NEEDS

Although educational research, particularly of the quantitative empirical variety, has become increasingly complex in education - a trend which may be accounted for at least in part by the tendency of educational researchers to emulate the designs employed in the physical sciences - some adult educators who have surveyed the research in this field believe that there is a continuing need for non-quantitative studies. Brunner and associates noted that the adult education field has grown so rapidly that it has not yet raised many fundamental questions of itself. They concluded:

> There is a great need of more comprehensive descriptive and analytical study of patterns of formal and informal interaction among the various agencies involved in adult education. Case study analyses of the functions of community councils, adult education councils and other coordinative bodies based upon study of records, observation, and interview could be used to identify factors associated with the success or failure of these bodies (1959: p. 241).

Although a score of years has passed since that conclusion was written, there is little evidence to support a claim that the need they identified has been satisfied.

EMERGENT CONCERNS

Two distinct kinds of actions can be taken to increase the quantity, quality and utility of Canadian adult education research. The first kind of action is to support selected areas of research which have marked utility for Canadian society and for the advancement of adult education as an attractive area for research. The second is to provide an improved system for encouraging and assisting in the planning and execution of research and subsequently in its dissemination.

Areas for Specific Support

The three areas which are designated as appropriate for special

support are those which will provide the information and insights required for the formulation of effective public policy for adult education.

Wise policy formulation cannot occur in the absence of a valid data base, and the current data are inadequate to show fully the extent of adult education provision and participation in the full range of programmes in both governmental and non-governmental organizations. Inasmuch as there is not an agreed-upon system of data collection for adult education provincially or for Canada as a whole, the primary need is for the formulation of a standard system of data collection that is acceptable both to the relevant ministries of the provinces and to the scholars already identified with the adult education field. Until complete data on provision, participation and funding sources have been collected on a systematic and recurrent basis, all policy decisions can be no more than expressions of intention and opinion rather than informed actions founded on an adequate knowledge of the entire system.

The second major area requiring concerted research activity is the comparative study of alternative provincial and regional schemes for the funding and coordination of adult education provision. Although innovative approaches are being used in various provinces and localities, no systematic plan has been developed to ensure that the results, intended and unintended, anticipated and unanticipated, are recorded and analyzed. Also, little is known about the effects on the adult education agencies of infusions of federal funds restricted to short-term temporary programmes of training. Until the interrelationships among institutions providing adult education are better understood, any attempts at coordinating their activities to improve the quality, quantity, and utility of adult education provision in Canadian communities will be guided solely by intuition and limited acquaintance with a few alternatives.

In contrast to these two macro-type studies, the third area involves a micro-type approach to understanding the complex phenomena of participation. Traditional approaches to studying adult education participation which consisted of little more than correlational or multiple regression studies can be supplanted by emerging basic theoretical investigations which address participation and non-participation from political, economic and sociological as well as psychological conceptual frameworks. If this area of concern is

to be examined theoretically, it can yield benefits of utility to educational providers whose practical concerns lie with selected audiences such as the aged, inmates of correctional institutions, lone parents, immigrants, under-employed, unemployed and native peoples.

Improving the Research System

Adult education research can be improved in quality, quantity and utility through a number of approaches, only the most important of which are identified here.

University graduate programmes are staffed by individuals whose research preparation has been relatively narrow. Provision for educational leave which would be used for upgrading the research sophistication of university teachers of adult education and supervisors of graduate study would make it practical for dedicated faculty members with pressing ongoing financial obligations to invest time in professional improvement.

Adult education graduate students are typically among the older students in faculties of education, which are, in turn, likely to be the oldest group of graduate students in any faculty of a university. Fellowship funds which are entirely adequate to support the young single students found in many graduate departments are inadequate for the older adult education graduate student who is likely to have, not only a dependent spouse, but also several dependent children. Financial support from graduate students could reasonably make allowance for the heavier financial demands faced by the older students found in faculties of education and particularly adult education.

The provision of funds, targeted for adult education research but not restricted to investigators holding degrees in adult education in itself, encourages researchers from relevant disciplines to undertake such investigations, utilizing the theoretical formulations from their own primary fields. In a young field such as adult education, the cadre of researchers can be augmented by the addition of highly trained researchers from a number of social science disciplines who become attracted both to the phenomena of adult education and the financial resources available to support research in this area.

Adult educators by nature seem to be action oriented and attracted more strongly by opportunities to act as change agents than by the challenge of advancing frontiers of knowledge. Professors of adult education often exemplify the model of the clinical professor, immersed in practice but withdrawing briefly for reflection and for the teaching of the next generation of adult educators. Their lack of experience in writing proposals for funded research makes that process appear more formidable to them than it does to more sophisticated researchers in education and other social sciences. A fully sponsored workshop to provide adult educators in universities and elsewhere with additional training in proposal development and with advice on how to respond to a qualified rejection might provide the stimulus essential to overcoming the present reluctance to seek research support.

In Canada the problem of dissemination of research results does not lie in a shortage of journals, magazines and newsletters but, rather, in the difficulty of overcoming the balkanized nature of the field. Each special group within adult education has its own newsletter or magazine and typically aspires to producing its own journal, which will publish articles dealing with the sharing of experience in a narrowly restricted area. Modest support for a 'house organ' for the Canadian Association for the Study of Adult Education, the only Canadian organization created expressly to foster adult education research and to improve communication among Canadian adult education researchers, might provide the essential support this fledgling organization requires if it is to survive and mature.

Adult education research in Canada can be improved in quality, quantity and utility by adopting policies and providing opportunities to researchers based on knowledge of the field and those who are available to conduct such research. This report is an attempt to draw upon knowledge of the field gained through extended involvement in adult education scholarship and practice in order to formulate recommendations for actions to produce those improvements.

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Chapter 4

COUNSELLING PSYCHOLOGY

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Counselling psychology is a discipline that traces its roots back to the vocational guidance movement which sprang up in the United States at the beginning of the twentieth century. It was generated by a massive influx of immigrants to the East Coast who were in desperate need of direction regarding work as well as schooling. The response to this need came from both the public and private sectors as significant numbers of educators and political leaders became sensitive to the social disorder and pathology as well as the individual suffering that resulted from not providing help of an institutional nature to such individuals, especially when they were agglomerated in large urban centres.

From these beginnings a discipline emerged whose theoreticians and practitioners developed a body of knowledge that was nourished by the mental measurements movements as well as developmental and career psychology. Like other disciplines within the mental health field, counselling psychology has drawn liberally for its theoretical underpinnings from the various social sciences, not excluding, of course, various sub-specializations of psychology itself.

COUNSELLING PSYCHOLOGY: A DEFINITION AND DESCRIPTION

Counselling psychology can be defined as a speciality whose practitioners help people improve their psychological well-being, resolve crises, and increase ability to solve problems and make decisions. Counselling psychologists assume

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that human problems and their solutions lie in the interaction of personal and environmental forces. Counselling psychologists conduct research, apply interventions and evaluate services in order to prevent and remedy developmental, educational, emotional, social and vocational problems (American Psychological Association, 1981).

The following principles are widely accepted as integral to this discipline, shaping and informing the varieties of helping strategies that are offered to its clientele, directing its research, and structuring its training programmes.

1. The professional endeavour is essentially a psycho-educational one in which problems-in-living are construed less as illnesses or symptoms of illnesses than as emotional, cognitive and behavioural deficits. The perspective of the practitioner is hygiological rather than pathological.

2. Solutions to complex life problems reside in the interaction of environmental forces and intrapsychic dynamics. Counselling psychologists teach individuals, singly or in groups, the skills necessary to understand, evaluate, and successfully manage the environmental forces which influence their development and their emotional and behavioural responses to those forces. This same enabling endeavour pertains when these practitioners work with a system, such as a family, a teaching staff, a class of students or an operating-room nursing staff.

3. Persons are always moving through developmental life phases requiring decision-making and problem-solving skills appropriate to those phases. Interventions, therefore, are tailored according to the client's level of maturity, developmental needs and life-tasks.

4. A principal goal of the counselling psychologist is to help people develop their own strategies for coping with present and future problems and challenges. The therapeutic outcome for their clientele is enhanced self-reliance and autonomy, freeing them from the long-term tutelage of professionals. Heightened intentionality in clients is another outcome sought by counselling psychologists. It ensures that their clients understand that one must endure (or enjoy) the consequences of one's own behaviours, that one must accept responsibility for them and, further, that these behaviours are not without significance to others in one's environment.

The praxis-theory dichotomy in counselling psychology has not exhibited the divergence one may find in other disciplines. They are closely interlocked because the theoretical expressions of this field have been formulated by professionals who have, by and large, worked much of their lives in schools, employment settings, community and university mental health centres. Further, this discipline has traditionally used psychological constructs that have high-level specificity, have been carefully operationalized, and are thereby more amenable to quantitative analyses than the constructs elaborated in more medically oriented models of psychotherapy (for an extensive discussion of this issue, see Marx, 1969).

The research hypotheses which have been tested by counselling psychologists have generally been closely tied to the perceived needs of their constituents and the ambient society. For example, it is not by chance that a significant part of the published research of Canadian counselling psychologists, appearing in both American and Canadian journals, bears on problems that relate to education and career-planning that typically emerge in secondary school populations.

A review of the literature by Krumboltz, Becker-Haven and Burnett (1979) paints a canvas of research studies that provides us with a useful conceptual framework to analyze the field of counselling in Canada. The research emphases are consistent with the traditional domains of responsibility of counselling psychologists. The objectives for these domains are roughly as follows:

1. Helping individuals negotiate the "crises" which appear in successive life phases. The counselling psychologist provides interventions of an educational character that support the total personal development of his/her client. He/she teaches strategies for making optimal career and other life decisions. This is done in the larger counselling context of promoting the individual's adjustment to his/her family and social ambience as well as to his personal endowments and needs.

2. Altering maladaptive behaviours. Many of the difficulties that drive persons to seek help from counsellors have their genesis in self-defeating, disorganized, and maladaptive behaviours. These difficulties may be compounded by the reactive effects of an unaccommodating, if not destruc-

tive, environment. Although counselling psychology has a well-developed armamentarium of clinical techniques appropriate to its own orientation, it also uses strategies from cognate mental health professions.

3. Preventing problems and conduct disorders in individuals (and populations) at risk. By providing "anticipatory educational interventions," counselling psychologists help parents, educators and administrators, among others, to modify environments over which they exercise some control, with a view to minimizing the stresses and pathogens that promote dysfunctional or inefficient behaviour.

RESEARCH IN COUNSELLING PSYCHOLOGY

Counselling psychologists have engaged in basic and applied research in (1) counselling process and outcomes, (2) development of tests and assessment techniques, (3) models of personal and social change, (4) person-environment interaction models, and (5) career education and decision-making (Pepinsky, 1978). One of the most urgent imperatives for this discipline has been to determine which of its specific strategies for assisting people are most effective, whether they be in nursery schools or universities, private fee-supported clinics or public tax-supported institutions. Research resulting in definitive knowledge of counselling outcomes is still wanting. Furthermore, relatively little is known of how counselling changes occur. While there has been no major breakthrough in our understanding of how the process works, some crucial variables are examined. Instead of comparing large, unspecific systems of counselling or psychotherapy, researchers are trying to define the multi-dimensionality of change (Lambert and Bergin, 1978) and to take into account elements across theoretical orientations. One important effect of these studies has been to lead us to reconsider the way we pose our research questions about processes and outcomes. We have come to realize that research in human behaviour is essentially relativistic and pluralistic.

There are two logical sequelae to be inferred from the foregoing. First, if there are some active ingredients, beyond nonspecific variables (among which is the placebo) that are operative in the therapeutic and counselling endeavour, it will require some research that is remarkable for its "conceptual clarity,

methodological rigour, and inventiveness" to reveal them (Rachman and Wilson, 1980: p. 230). The second is implicit and less obvious. The practitioners of each discipline have a coercive bias in favour of the approaches in which they have been trained. The statement of Estes (1957: p. 617) is instructive in this regard:

> In his own experience, the writer has found that the steepest obstacle to theory construction in psychology is not the complexity of behavior. It is the mountain of stereotypes deposited by centuries of pre-scientific attempts to comprehend behavior and capped by the pronouncements of the academicians who have always known in advance, apparently by divine inspiration, exactly what kind of theory is possible and proper for psychology. This barrier must be undermined by uncertainty before it can be toppled by experiment. Once it is down, our experimental subjects will be able to tell us, through the medium of their behavior, what kind of theory psychology is entitled to.

Apparently, we need to do more research aimed at building cogent, elegant, and heuristic models and theories of healthy human development and counselling and less research aimed at discovering "facts" about current techniques. It is from this perspective that the following should be interpreted.

There are a number of schemata for categorizing the activities being researched in the field of counselling psychology. We have chosen to report our summaries according to the schema used in the Annual Review of Psychology (Krumboltz, Becker-Haven and Burnett, 1979). Accordingly, we will focus on selected recent literature and research in (1) the remediation of maladaptive behaviour, (2) counselling in career, educational and other critical life decisions, and (3) the prevention of problems related to (1) above.

Remediation

Remediation is reported upon first, not because it is deemed most important, but because it has attracted the most attention in the last decade (an emphasis which seems to be waning) and, indeed, has been more generously funded than other sectors dealing with matters of public mental health. It should be noted that a number of influential studies of a review nature are available to the reader which are impossible to synopsize here

(see, for example, Smith and Glass, 1977, who have proposed a "meta-analysis" of outcome studies, and Luborsky, Singer and Luborsky, 1975, who provided a good review of psycho-therapeutic outcome research). These numerous studies have demonstrated the effectiveness of psychotherapy and counselling interventions in helping people resolve an extensive range of problems.

Research activities in the area of counselling interventions have been rather productive. Counselling strategies have been demonstrated to be effective with school children whose conduct disorders are disruptive to classmates as well as self-incapacitating. Behaviour modification techniques have held pride of place in this regard and are widely used by counsellors in schools (O'Leary and O'Leary, 1976). More research, however, is needed to enable children to internalize the values and controls which find expression in the classroom but not in the home or community at large (Thoresen, Kirmit-Gray and Crosbie, 1977). More effective consultation procedures need to be developed for the counselling psychologist who works with teachers and other child-concerned community leaders. That consultation bears, not only on teaching methods that enhance the "self-management of conduct problems" (Rich and Schroeder, 1976), but also on programmes that allow schools, agencies, sports associations and other institutions to collaborate at their numerous interfaces to relieve individual and group problems.

If we grant that research and theory should rarely be remote from one another, and that both should be inspired and shaped by the salient needs of society, we must turn our attention to the increasing importance of the school and university in the lives of people. The school, as an ecological system that socializes our children and youth, for better or for worse, needs intensive study. Programmatic research on such approaches to anti-social behaviour as the Teams-Games-Tournament programme (De Vries and Slavin, 1976), is a model for Canadian researchers in school counselling, given the mounting levels of apathy and indifference, if not pathology, evident among some school populations. That programme provides for a dramatic restructuring of task and reward systems that enhance both academic performance and social behaviours.

Training clients in cognitive mediating skills is an area of increasing importance in every dimension of the professional mental health field (Bandura, 1977). It is no less so in the more specialized domains of the school counsel-

lor, the marriage and family counsellor, and other sub-specialities within counselling psychology. Pre-schoolers, as well as the aged, can be taught to think through their problems, to generate alternative solutions to them and to assess their consequences. Adolescent delinquents and middle-aged problem drinkers can be taught to use alternative self-instructions in the presence of powerful cues that trigger problem behaviours (Goodwin and Mahoney, 1975). The work of Camp and her associates (e.g., Camp, Zimet, Van Doornick and Dahlem, 1977) is illustrative of this promising research track. So also is the work of Novaco (1977) that focuses not only on the use of covert language but also cognitive restructuring and acquisition of problem-solving skills.

An important effect of the research studies of the last decade is that they have led us to reconsider the way we pose our research questions and attempt to answer them. We are avoiding lump theories of educational as well as behavioural problems (Rachman and Wilson, 1980). Long ago Kiesler (1966) said, "Counselling is not a unitary process nor is it applied to a unitary problem." Furthermore, counsellors cannot be regarded as relatively homogeneous units that deliver a standard treatment, uniform in both quantity and quality. Still less uniform are clients who, even if they bear similar problem labels, are differentially receptive to various forms of treatment, depending on level of cognitive complexity, family childhood environment, education, culture, linguistic and verbal skills, among a host of other variables. Accordingly, the question of what the counselling psychologist does, has to be made more specific: What specific counselling interventions produce specific changes in specific clients under specific conditions?

Developmental counselling

Counselling psychologists have been profoundly influenced by developmental psychologists (Zax and Cowen, 1973). Those especially of a constructivist orientation have provided us with perspectives on such areas as perceptual, cognitive, language, motivational and emotional development that have allowed the counsellor to conceptualize appropriate-level interventions in the life of his client. The range of clients extends from the toddler in

the day-care centre to the terminally ill in palliative-care units. Developmental considerations are important when treating adolescent "junkies" (Dumont and Vamos, 1975), middle-aged housewives, jaded businessmen in search of a new career or workers preparing for early retirement (Talley, 1981). Some counsellors have designed and evaluated developmentally oriented programmes in the schools (Katz and Ivey, 1977). For example, Wittmer and Myrick (1974) have developed activities by which students are made aware of their feelings, thoughts and actions in their learning process. Others, like Beesel and Palomares (1967), have initiated programmes stressing the development of self-concept through group discussion of topics relevant to social and emotional developmental stages. Varenhorst and Gelatt (1971) stress that skills in a developmental context are crucial.

The counsellor also pays special attention to clarifying how individuals relate to, deal with or cope with their social environment. To say that this is the central concern of counselling psychology is perhaps to say the obvious. But the obvious is what we frequently overlook. All aspects of counselling psychology, whether it be concerned with general development, career development, prevention or modification of maladaptive responses, involve to a greater or lesser extent the interaction of people with people. How individuals interact with others determines to a large extent the individual's development, satisfactions and sense of well-being. Clearly, much maladaptive behaviour stems from faulty social interaction. Thus, it is not surprising that central to all theories of psychopathology is some notion of faulty interpersonal interaction.

Because an individual's ability to cope with the social environment is a central concern of counselling, systematic, focused research in this area should be given a high priority. Furthermore, if one accepts that coping with the social environment is of central concern in counselling, a number of specific problems calling for research can be specified.

First of all, if we are concerned with helping an individual deal with his or her social environment, it will be essential to specify the social or interpersonal environment in such a way that the client and the counsellor can observe it and talk about it in a meaningful manner. The notion of a social environment assumes that there are a restricted number of features of

that environment that can be detected by the sensory equipment of individuals. This is not to deny that individuals interpret, evaluate and elaborate upon features of the social environment; the point here is that some features of the social environment are detected and not created by the individuals. Considerable research has taken place in this area but clearly a great deal more is called for.

Another research project would be to develop a system for understanding and talking about socialization that clients could understand and make use of. The global descriptions are not particularly helpful to a client who is trying to understand his or her difficulty, or a parent who is in the process of socializing a child.

Research concerned with the nature of interfering effects and with how to identify them would also be an important area. It would also be important to discover effective ways to correct the interfering effects.

Perhaps central to this whole approach would be research concerned with identifying the skills, knowledge and attitudes that are necessary to cope effectively with a social environment. And then it follows that we would need research to develop techniques for teaching the necessary skills and understanding. It would also be important to research language since it is a tool that is central to promoting change.

But perhaps the most important sector for developmental counsellors is, and has historically been, career counselling. Good reviews of the literature in the field of career development have been done recently by Super and Hall (1978) and Osipow (1976), among others. For those wishing an authoritative introduction into this highly specialized field, these two articles can be approached with confidence. Two recent issues of the Canadian Counsellor have been devoted to matters of career development that are especially relevant to the Canadian employment situation and the work being done in the Occupational and Career Analysis and Development Branch of the Canada Employment and Immigration Commission (1979, 1980).

Of particular interest in this field is the development and implementation of career education programmes for the schools (see Young and Borgen, 1979). This research track merges nicely with the theoretical orientation of Christensen (1976) or more recently of Hiebert, Martin and Marx (1981), who propose that counselling is a process of instruction whereby the client

learns skills which allow him/her to make adaptive, well-informed choices on all dimensions of his life where freedom exists. The choice of an occupation is among the more important of these.

Krumboltz et al. (1979) have delineated a number of categories into which recent research efforts have been divided with respect to the formidable question: How can one help others make wise career decisions? These are "improvements in decision-making skills," "increases in 'career maturity'," "changes in the nature or quality of choices," "improvement in employment-seeking skills," and "improvements in job performance and satisfaction" (p. 577).

Relative to each of these criterion variables, a considerable amount of good research has been done in Canada within universities and government ministries of labour and education. (Consult, for example, Pelletier et al., 1974; Jarvis, 1976).

Prevention

It is unfortunate that so few counselling psychologists work with populations "at risk," who need help, less to remediate actual problems than to prevent future ones. Nor, as a consequence, do many seek funding to do research in this area. The discipline relies to a great extent on the research efforts of other professionals (which is not in itself undesirable) to assess the pathologizing impact of environmental factors on their clients. But there is a deplorable hiatus in our concern as well as in our research literature with regard to effective strategies and programmes for counselling specifically with the following foci: (1) early childhood, (2) social systems such as the family and the school, (3) proactive crisis intervention, (4) consultation and indirect services for administrators, teachers, and "middle-management" personnel, and (5) the epidemiology of conduct disorders and mental problems (Cowen, 1973). The variables that affect the well-being of individuals are often unsuspected and remote.

Numerous studies indicate that perceptual, linguistic, and motivational variables that facilitate cognitive as well as socioemotional development of

of the child are seriously engaged by parental attitudes and consequent behaviours. It would seem that mental health professionals should intervene at an early stage of human development to preclude the environmental insult to vulnerable organisms that enhance the probabilities that they will need costly remediative counselling in their more mature years.

In our society, adaptation to school is a critical stepping stone to many later life adaptations (Glidewell and Swallow, 1966). Failure to adapt is frequent. Yet relatively little is known about this phenomenon and its consequences (Levine and Graziano, 1976). The need for innovative research projects in the prevention of school maladaptiveness is apparent to those close to this scene. More projects like the Primary Mental Health Project (Cowen et al., 1975), which provides indirect counselling through consultation with teachers, parents and children, are needed. This project has resulted in a reduction of the frequency and severity of behaviour problems at a low cost. Furthermore, research is needed to develop constructive developmental and preventive counselling of couples, families and school staffs to alleviate psychological stress especially for the child who, in the home, is pathologized by marital discord, overcrowding, parental cruelty, prolonged illness, financial hardship and deprivation, among many factors (Dumont, 1981).

Supporting and encouraging preventive research activities which seek to forestall dysfunction by reducing rates of occurrence of disorder over long periods of time and to promote psychological health and well-being, could very well be the best investment of money and time that a society can make.

Concluding note

The counselling psychologist has been defined as engaging in three major areas: remediation, human development, and prevention, through research and practice. It is important to underline that, in these areas, counselling psychologists are unique in stressing a psycho-educational approach where skills acquisition and dissemination are central. Counsel-

ling psychologists have developed, through research and practice, systematic strategies and skills that they use differentially in prevention, remediation and developmental tasks. Counselling psychology is thus a systematic process where specific procedures and skills, for example, communication, life-planning, decision-making, parent-training, problem-solving, relaxation, among others, are used differentially with clients. As a result, the teaching of these skills is becoming increasingly important. This discipline has grown over the past decade and our ability to make significant changes in clients and client environments has increased (Ivey, 1976).

METHODOLOGICAL ISSUES

To generate counselling knowledge based on research that springs from highly theoretical, even hypothetico-deductive, systems is not always an undesirable objective. Yet, when scientific research in an area like education is remote or separate from practice, it becomes important to raise questions not only about the research designs employed but the content of the research itself (Bergin, 1963). This is especially true if, as has been suggested by Stake (1968), educational research is becoming functionally separate from the practice of education. An examination of these issues in terms of salient features of current research methodologies may provide some cues to our understanding of the question: How can we proceed to close the research-practice gap and enhance the scientific productivity and utility of our research endeavours?

Research designs: trends and problems

When one scans the literature, a number of questions come to mind that reflect the diversity of research conceptualization that informs the field: (1) Given the laboratory-field setting continuum that can furnish one measure of the rigour and data-hardness of a study, where should the preponderance of our efforts be situated? (2) Should more small-sample studies be done, or should we move toward ever-larger group designs? (3) Need we expand the

traditional notions of scientific methodology? (4) Should research be more basic or more applied?

Regarding the first question, some critics continue to exhort their colleagues to do well-controlled laboratory studies (Strong, 1971) and find less precise quasi-experimental research to be only a more-or-less respectable prelude to "real" scientific study (Kiesler, 1971). A countervailing view is promoted by Goldman (1978), who asserts that, granted the virtues of the laboratory, only field-type studies can furnish veridical insights and generalizations about human beings.

An important debate in counselling research circles focuses on the increasing use of research methods other than the traditional and correlational approaches (Cronbach, 1957). This trend seems to be characterized by terms like naturalistic, idiographic, practical, relevant, applied. In any event, they are subjective and qualitative and give us soft signs of therapeutic, behavioural change. It has been suggested by others (e.g., Stake, 1969; Harrison, 1970) that scientific research based on traditional methods has been alien, divorced from school operations and the educational enterprise generally. Continuing in this stream are Burch and Peterson (1975), who assert that traditional methods of inquiry are not needed but, rather, evaluation of programmes. Given these objectives, a number of research procedures are promoted: quasi-experimental designs (Cook and Campbell, 1979); the use of unobtrusive measures (Webb, Campbell, Schwartz and Sechrest, 1968); the formative evaluation model (Scriven, 1967); the "n=1" design and time series design where patterns of change are observed and measured over time (Hersen and Barlow, 1979).

What do these controversies imply for researchers in counselling? First they would be well advised to remain open minded on methodological options (Zingle, 1976). The assertion of the superiority of one research strategy over another is temerarious to say the least. What needs to be justified is the fit between the particular problem and the specific research procedures chosen to address it. Further, the kinds of questions most useful for grappling with various kinds of theoretical constructs when used at various levels of specificity need to be examined (Gelso, 1979). Again, it becomes important to determine what kind of design provides optimal

probative force for the problem under consideration. Counselling research must utilize a variety of design options, given the protean character of its treatment modalities and the variety of its clientele. Exclusive use of any design and specific data analysis strategy guarantees reductionist perspectives and self-fulfilling expectations. The multiple paradigms operating in our field are, in fact, just an accurate reflection of the complexity of the human being and his social organizations. A pluralistic and relativistic perspective in the study of human behaviour is, in fact, a sign of methodological maturity in research (Lecomte, 1980).

Summary remarks re methodology

We have learned a great deal in the last decade about how science is done by scientists (Mahoney, 1976; Lakatos, 1970) and about what constitutes scientific theory and research (Popper, 1972). Rigid notions about "true experiments," "valid statistical strategies" and "objective data," once considered to be absolute, if not self-evident, have been relegated to a "relativist" status (Thoresen, 1978). These theoreticians seek to increase our sense of trust by cultivating our doubts in a systematic and responsible fashion (Campbell, 1973). Research methods do not exist independent of the phenomena under study. Kraemer (1981) underscores the fact that classical (and elementary) approaches to design and research analysis are frequently based on expectations regarding the behaviour of subjects and on response measures, both of which are unrealistic in the context of counselling and clinical research.

Based on the foregoing, it may be useful to state tentatively and in a nuclear fashion a few principles (which some may find self-evident and unremarkable):

1. The fit between a problem and the specific research method chosen is crucial.
2. One cannot, in the abstract, designate any single design as "best."
3. Asserting causal relationships in the social sciences is an epistemological snare.

4. Most classical research strategies are unrealistic in the domain of counselling psychology and its research needs.
5. Research in counselling should reflect the relativistic and pluralistic systems within which the practitioner works (Lecomte and Bernstein, 1979).

Granted the above, the following suggestions are proffered for consideration by the counselling researcher.

1. Subjects are difficult to find; they are not always cooperative; and the data tend to be soft (Kraemer, 1981). These facts should stimulate the elaboration of robust, relevant, but rigorous strategies.
2. Exploratory data analysis techniques could be used more systematically to learn directly from the data (Hartwig and Dearing, 1979) instead of prematurely trying to confirm or disconfirm hypotheses.
3. We should continue to explore the utility especially of such designs as quasi-experimental, intensive, time-series, unobtrusive measures and evaluative procedures.
4. Programmatic research and replication should be given a new respectability. In the long run, replication studies would save significant amounts of time, money and energy.
5. Integrative, critical reviews of Canadian literature should be encouraged, for there is a paucity of such scholarly contributions in our field. This kind of integration and synthesis of findings provides insight and direction for future research.
6. Though applied research needs to be promoted, basic research into what the counselling processes are and how behavioural changes happen must not be neglected.
7. Our training programmes are unique among practitioners within the mental health field. Particularly characteristic of them is the integration of basic and applied competencies. Moreover, research is an essential responsibility of counselling psychologists, and they need to be trained accordingly (Thompson and Super, 1964). Improvements in our training methods should not be the last priority on our research agenda.

RESEARCH SUPPORT IN COUNSELLING

Research in counselling psychology in Canada takes place in a variety of settings. The pattern of these settings, and of the "soft" financial infrastructure that defrays research costs, more closely resembles that which occurs in the United States than that which occurs in Europe or elsewhere. The principal setting is the university where, not coincidentally, graduate training is normally provided in this field.

What is characteristically Canadian is the high level of support from provincial governments for training programmes and their integrated research components. What is even more unusual and, indeed, laudable is that provincial governments conduct research in counselling, either directly in branches of their own ministries or by contract with private institutes. Included within this research endeavour are the development of psychometric instruments and the promotion of library and archival resources for use in such counselling settings as schools, colleges, universities, community mental health centres, employment offices, rehabilitation clinics and therapeutic communities, among others.

The federal government, needless to say, is deeply engaged in significant research projects (to which we have alluded above), especially those which bear on the enhancement of ambitious employment counselling programmes. Allied to this is the development of an extensive network of employment counselling centres using paraprofessional counsellors trained in government programmes.

The principal problem we discern relative to this area of the profession, on a provincial and national scale, is that there has been an elaborate development of human services without, in many instances, a proportionate commitment to the evaluation of such services. And we are not aware of a systematic, cumulative effort to organize research on a nation-wide basis nor to provide for sustained contact between the research units of various regions. Among the unfortunate consequences of this reality is that (1) many of our more productive professionals are tied into American publications and research networks and (2) there is a fragmentation of research efforts and a patchwork

approach to meeting challenges that contemporary society presents to the counselling psychologist.

Finally, a limited amount of research is conducted by research institutes that are both privately and publicly funded. Normally, this is done on a contract basis. This type of research seldom receives a broad circulation.

Recommendations: A substantive perspective

There is a large and varied array of sectors in which research characterized by inventiveness and imagination as well as methodological rigour needs to be done. Within that array can be found the following, presented here without presumption of their relative importance:

1. Development of innovative methodological procedures for the evaluation of the counselling effectiveness of the counselling psychologist.
2. Development of systematic, cumulative approaches to preventing and remedying conduct disorders that characteristically appear at one or another level of our educational system.
3. Doing critical integrative reviews of Canadian literature as well as of Canadian programme development in this field.
4. Development of more adaptive multivariate research projects, particularly of an interdisciplinary character.
5. Continued investigation of clinical counselling modalities for the correction of affective and behavioural dysfunctions.
6. Continued investigation of process variables in psychological counselling, particularly those of a nonspecific character that appear prepotent in effecting client change.
7. The development of training programmes for paraprofessional and non-professional helpers in the "give-psychology-away" tradition (Miller, 1959).
8. The development of service delivery programmes and systems for (a) helping parents to develop skills in "socializing," (b) enhancing mental health factors in public school education, (c) improving the nurturant and

educational aspects of day-care centres, (d) identification of inevitable life crises which frequently precipitate maladaptive responses with long-term consequences (for example, the death of intimates, precipitous aging, business failure, serious illness), and the most appropriate supportive therapies in each case, and (e) the development of palliative-care programmes for the terminally ill.

9. Initiating inquiries into the problems and pathogens of contemporary urban life.

Recommendations for operational support

A widespread view is that funding in Canada for research efforts in the areas defined above is meagre. In none of those areas has support been considered adequate, a view that has been intimated above as each of the three major sectors was reviewed. Nevertheless, it may be useful to express here, in some nuclear statements, the need for operational support that researchers in counselling psychology perceive whether they work in schools and universities, hospitals, private agencies, or other professional settings.

1. Continued and enlarged support of doctoral and post-doctoral fellowship programmes is deemed necessary. The provision of funds to facilitate the exchange of graduate students and professors between the various regions of Canada would be highly useful.

2. Special provision of funds to develop models of training and supervision in the domain of research methodologies that are closely tied to the practice of psychoeducation, for example, and other field operations is needed.

3. Educational research journals such as the Canadian Counsellor need to be provided more financial support to allow them to focus more intensively on the interplay of theory, practice and research.

4. Specific support for a wider range of research projects involving especially the concerns and variables of a preventive nature. These projects should be supported as they bear on populations "at risk," independent of the age-strata being examined, especially when they reveal a sophisticated developmental approach to human vulnerabilities.

5. Specific support should be channeled into endeavours to provide integrative reviews of research literature and current projects that are emanating from Canadian sources and are addressing Canadian needs.*

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Chapter 5

CURRICULUM AND INSTRUCTION

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DESCRIPTION AND DEFINITION OF THE AREA

Structure of the Field

Although curriculum studies is still a fragmented field, its recent history has led to more integrated and unified notions of the field's scope. Curriculum departments have been established which, at one time, would have been composed of anywhere up to a dozen sub-departments; professional curriculum associations have been formed; conferences are held; and the world's first international curriculum journal, first published as Curriculum Theory Network and now Curriculum Inquiry, began publication in Canada.

Perhaps because of its fragmentation there have been numerous writings advancing classifications of the field. Currently popular in some circles is the division into traditionalist, conceptual-empirical and reconceptualist. We, however, did not find this, or others, useful for our purpose of presenting a comprehensive account of curriculum researchers and their work in Canadian universities. Instead, we found it convenient to organize Canadian curriculum

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studies according to the subject matter of their inquiries [2.1 - 2.3]*, viz.,

Curriculum Theory and Criticism

- Theory and Criticism
- Textbook Preparation
- Graduate Studies Research

Curriculum Preoccupations

- Curriculum Development
- Curriculum Evaluation
- Curriculum Implementation
- Policy Analysis
- Practical Knowledge

School Subject Matter Sub-specializations

- Music Education
- Art Education
- Physical Education
- Mathematics Education
- Social Studies Education
- English Education
- Science Education
- Language Education
- Reading
- Vocational and Technical Education
- Early Childhood Education
- etc.

The Final Report discusses these areas in terms of the place of curriculum in the theory and practice of schooling [1.11] and in terms of quantitive and qualitative methodologies [2.4].

Theory and Practice in Curriculum Studies

School Reform is a theory-practice problem. It is a problem in the practical usage of knowledge. Likewise, the problem of understanding schooling is a theory-practice problem. It is a problem of understanding practical action and practical reflection. While the problem of school reform and the problem of understanding practice have different purposes, they are inextricably interwoven. Pragmatic studies of how to improve schooling give insights

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* The Final Report from which this paper was extracted was approximately 200 pages in length and consisted of five sections. Its table of contents is given in Appendix 2. The numbers in square brackets refer to section numbers in that table of contents to enable readers to obtain further information should they wish to.

into the character of the personal-practical thought of teachers; and theoretical studies aimed at understanding the nature of practical action are suggestive of how intervention may be most effective for the improvement of schools.

Curriculum studies have a special place within this theory-practice matrix. Inevitably, curriculum studies whether reform-oriented or knowledge-oriented take place at the boundary between theory and practice. Curriculum inquiry studies actual practices, plans for them, and their organization. The The interest is inevitably broad.

Furthermore, curriculum studies normally adopt theoretical perspectives from the basic disciplines, e.g., cognitive psychology. But such studies are not curricular if they are merely applied psychology in a curriculum setting. To be curricular, inquiry necessarily focuses on situations in their entirety. It is the situation, not the adopted theory, which assumes importance. Hence, curriculum studies take into account other, narrower, but more highly developed, studies in philosophy, psychology, achievement and so on. It is for this reason that curriculum studies has a special place in the field of educational inquiry. Curriculum studies is neither more theoretical nor more practical than other studies. Its special characteristic is that it studies action situations as a whole and to do so must draw on narrower and more highly developed academic studies in other fields of the social sciences and humanities.

We adopt the view that ultimately the social justification for curriculum studies rests with its demonstration of the possiblility for the improvement of practice. We acknowledge as equally important knowledge-oriented and reform-oriented studies, but we further believe that the former must finally give an account of themselves from the point of view of schooling. This position is not by any means universally held, and there are those who feel that it is enough to do theoretical studies per se [1.11].

The kinds of studies taking place in the theory/practice matrix are diverse. Philosophically, there are four forms of inquiry applicable to either reform-oriented or knowledge-oriented studies: logistic, problematic, operational and dialectic [1.111].

According to the logistic form, theory and practice are treated as sharply distinct. Practice is viewed as applied theory as, for example, in

the attempts of educational reformers to build systems, analyze theories, implement strategies and the like.

In the operational form, practice is seen as irrational, and truth is sought in opinion. Knowledge is viewed more as an activity and a process than as a theoretical understanding. This form of research lays its trust in such matters as need assessment and uses opinion studies to get a fix on the attitudes and predispositions of practitioners for purposes of operating as change agents in practical settings.

The problematic form views knowledge as entering practice through problem-solving methods. Both knowledge and practice are changed, according to this view, during processes of inquiry. The problematic tends to be idiosyncratic and local as one and then another special problem emerges in actual situations.

The dialectic form deliberately treats theory and practice as inseparable problems. Theory is seen in practice and vice versa. According to this view, the practical constitutes a kind of theoretical proof such that if theoretical notions and practice are incompatible, it is theory rather than practice that is seen to be at fault. There are no full-blown dialectic views in the literature although there are neo-Marxist writings at work. The theory/practice view of curriculum described in this paper is, in effect, a dialectical one which attempts to create a place for sharply differing kinds of studies.

Characteristics of Curriculum and Curriculum Studies

The previous section described the formal structure of enquiry in curriculum studies. In this section we describe a set of characteristic features of curriculum as practiced [1.121 - 1.26], and we describe corresponding characteristics of the field of curriculum studies [1.131-1.134; 1.141 - 1.145; and 1.21].

Characteristics of Curriculum. For purposes of this paper, characteristics of curriculum are presented in point form.

1. Curriculum focuses on content. Content may be defined in terms of subject matter or in experiential terms.

2. Content is usually conceptualized in terms of foundation fields (for example, epistemological concepts of scientific knowledge in the science curriculum).
3. Curriculum is a practical, reflexive activity. It is concerned with doings and actions.
4. Curriculum exhibits situational variation. Each curriculum setting exhibits uniqueness in its particulars and commonality with others in its general, abstract features.
5. Curriculum is an ethical enterprise. There are few, if any, truths or musts in curriculum. The proper curricular questions are: What ought to be done? and Is that a good thing to do?
6. Curriculum practice constitutes the phenomena of curriculum studies. These phenomena, in addition to actual school activities, include such matters as curriculum materials, plans, policies and organizations.

Characteristics of Curriculum Studies. The field of curriculum studies reflects the complex, action-oriented, situation-specific character of its curricular phenomena. There is no set pattern of university departmental organization, and several universities still do not offer courses in curriculum. No doubt courses under other names would, according to our notion of the field, be curriculum courses. Some universities have curriculum departments composed of representatives of the main areas noted above, namely, curriculum theory and criticism, curriculum preoccupations and school subject-matter subspecialization. Others retain a departmental structure organized according to the subspecializations, a structure which reflects their teacher education history. In some such cases, small curriculum departments or centres have been added in recent years. The preoccupations tend to reflect clusters of faculty interested in a common problem, and the faculty may be housed in a curriculum department centre or in a variety of departments jointly offering a programme emphasis.

Because of their diverse backgrounds and variable placement in university departments, curriculum writers adopt a diversity of curriculum languages. This is not unlike any academic discipline whose different perspectives lead to different methods and lines of enquiry. But diversity is,

perhaps, more extreme in curriculum than in most fields where, for example, the work of a portrayal-oriented evaluator is hardly recognizable from the perspective of a performance-oriented evaluator. One unfortunate consequence of this diversity is the tendency for curriculum fads and fads in curriculum studies.

One legitimate area of curriculum research denied scholarly funding in Canada is applied and developmental curriculum work. Perhaps because local boards and provincial governments fund the adoption of foreign curriculum development, there is a feeling that sufficient resources are already attached to the area. But it is precisely because of this funding that independent, scholarly inquiry is needed. Curriculum development inevitably proceeds in an urgent, mission-oriented environment. There is neither the time nor the predisposition to analyze and critique the theoretical concepts and assumptions on which development is founded. Several points bear on this matter and are described in the Final Report:

1. Research has tended to be of little value to curriculum development. The two are disappointingly indifferent to one another, and concepts are needed to bring them into a more useful relationship.
2. The translation of "ought" to "is" and vice versa is muddied in the field of curriculum. The translation between the two is a continuous curricular problem in university teaching, professional development and curriculum development.
3. Much curriculum research is normative. This factor requires acknowledgement and independent critical enquiry of the presuppositions adopted in curriculum research.
4. All curriculum research is ultimately partial in comparison to the curriculum situation it studies. Accordingly, the impact of curricular research (as for any other kind of educational research) cannot be predicted; indeed, it is the personal-practical knowledge of practitioners that justifies their fundamental independence of academic resources. SSHRC should not imagine that even the best curriculum research will have inevitable consequences of a certain kind for practice. But SSHRC can expect that researchers justify and imagine what practical uses their research <u>might</u> serve.

The curriculum research base is thin in Canada. There are few distinctively Canadian research efforts in curriculum although there are many excellent studies now being done within the Canadian context. Part of the reason for the lack of distinction is due to this generalizability of knowledge, and part is due to the lack of funding and to the out-of-country training of many of our scholars [0.1].

The various background papers (Appendix 1) repeatedly pointed to their fields' dependence on foreign research and development. Sometimes this makes a difference and sometimes not but, with so little support of Canadian curriculum research, we frequently do not know the difference and are unable to chart our own course. Even provincial governments rely heavily on outside trends when making policy decisions. While it is important that they do so and not become insular, it is more important that this be done from a position of academic and developmental strength rather than from a position of weakness, as now.

RESEARCH SUPPORT FOR CURRICULUM STUDIES

Personnel

There are many capable curriculum scholars throughout the country, but they tend to be heavily involved in pre-service teacher education. In some universities the research role is barely acknowledged and research-oriented faculty must treat research as an "add-on" activity to their normal duties. There are exceptions: The Ontario Institute for Studies in Education is fully devoted to graduate instruction, research and development; the Atlantic Institute is a research development institution and other faculties, such as the University of Alberta, release research-oriented faculty from undergraduate teaching duties.

There is evidence, however, that latent research capabilities can be mobilized for large-scale efforts as, for example, in Canadian Studies Foundation projects and the Science Council of Canada study in Science Education.

There are excellent doctoral programmes developing at Canadian Universities and, currently, the supply exceeds the demand for researchers. Accordingly, Canadian posts are increasingly filled with Canadian-educated scholars [0.1].

Most curriculum researchers are oriented to one or another of the foundation fields as a consequence of their own graduate training. The effect of this is that philosophical, psychological and sociological biases enter into apparently objective curriculum research accounts. These biases are a natural consequence of the location of curriculum in social science enquiry [1.133 and 0.1], but they may lead to academic fads [1.133 and 1.145].

Most Canadian curriculum faculty are in the school subject-matter subspecializations with a smaller number in the preoccupations and an even smaller number in curriculum theory and criticism.

Partly because of the teacher education context for many curriculum faculties, most curriculum people, as we have defined the field in its theory/practice sense, would see themselves as practical [1.32 and 1.33]. Furthermore, much curriculum research is field-based and is often classed as action-research where problems are brought to academics by practitioners. This is an important form of curriculum inquiry but one which is risky for a young academic to undertake in the more scholarly oriented institutions throughout the country [1.126].

Funding

It is our impression that Canada is one of the most poorly funded, if not the most poorly funded, of the western nations in the area of curriculum development. Anyone attending international curriculum development meetings, for example, will find that curriculum projects, developments and innovations are rarely described simply because there are so few of them. What there is tends to have occurred on the initiative of one or a few individuals or is an American or other adaptation. The latter have had a powerful impact on Canadian provincial curricula since the 1950's. Ironically, provincial governments buffer this effect by requiring "Canadianized" textbook lists

rather than by supporting indigenous programmes. They are, of course, left with little alternative given the Canadian marketing situation and the cost of development [1.141].

Most curriculum research is provincially funded. Little of this is for independent, scholar-defined research.

Much provincially funded research is concerned with practical school problems as defined by government [1.133]. Even more provincially funded research is policy-oriented where the government is either interested in initiating new procedures, such as province-wide assessment, or is concerned to allay fears over a policy measure already enacted [2.24].

Most practical school-problem research and policy research have short-term interests and are frequently operationally-oriented. This is partly due to the apparent usefulness of the promised how-to-do-it specification for the practical setting [2.22 and 2.23].

There are several small private companies such as the Educational Research Institute of British Columbia operating at the provincial level which will undertake curriculum and other kinds of educational research.

Impact

The theory/practice problem [1.111] and the fact that different institutions and individuals are more-or-less oriented to theory or to school practice [1.133] means there are very different kinds of research undertaken in curriculum with very different consequences. There are, for example, no necessary practical consequences of research on practical knowledge even though that research is conducted entirely in a practical setting [2.25]. On the other hand, policy studies which often ask direct questions such as: Are children achieving the goals specified in policy document X? may have immediate practical effects.

There are those who argue that research influences come from long-term academically defined purposes which affect the operating paradigms in schools, and there are equally strong arguments to the effect that school affairs are incremental and that academics will have their major influence

through short-term work on specific local problems. However the matter is settled, we note that the latter is more readily encouraged at a provincial level. There is little support for long-term research whether of a practical or a theoretical bent. One of the problems with provincially funded short-term research is that excellent work in evaluation [2.22], implementation [2.23] and policy analysis [2.24] is hidden away in provincial files and, therefore, can have local impact at most.

In general, research outcomes have tended to be of little service to curriculum development. Some of the factors associated with this situation are a lack of curriculum related research; the character of research which often inappropriately tends to use the agricultural control-plot methodology in competitive studies of ideas, methods and materials; and the fact that developers often come from fields outside of education and may be unaware of, or resistant to, curriculum research [1.141].

Two natural impediments to the possibility of direct, applied results from research is the theoretical problem of deriving curricular oughts from research results [1.142] and the fact that much curriculum research is necessarily normative with respect to paradigms of practice [1.143]. Furthermore, the complexity of practical situations is such that research results become little other than another conditioning variable in the decision-making that occurs in actual school settings [1.124] and [1.125].

The teacher's independence and personal, practical knowledge [1.142 and 2.55] have been shown in curriculum evaluation [2.22] and curriculum implementation [2.23] studies to be crucial and unavoidable influences in any imagined relationship between theory and practice [1.111]. There is, therefore, inevitably an unpredictability about the possibility of impact of research and theory on school curriculum practices. This is a natural outcome of the nature of curriculum [1.123] and of curriculum studies [1.133 and 1.134].

One of the principal ways of having impact is for research to follow, rather than precede, curriculum development. In this way, the principal conceptual organizers of school reform such as "open education," "enquiry," "structure of the disciplines" and so forth are subjected to research. Research following upon development should be long term and have federal support; otherwise, the effort will be swept away in a developmental tide as

textbook writers are hurried into motion by publishers anxious to capitalize on the current fad [1.134].

For many academics their main impact on schooling comes through graduate instruction [1.15 and 2.13]. This process tends to proceed with little inspection and a minimum of research. It is ironical that academics advocate a scientific approach to learning while omitting from scrutiny their own curricular practices [1.15].

The blend of graduate studies with professional development has been carried a step further at some institutions where field centres have been established with resident academics operating in consultative, advisory and graduate-instruction roles to local practitioners.

Textbook preparation [2.12] and journals [0.11] are means of influencing the research community. The academic curricular textbook industry is virtually non-existent in Canada, and the existence of the journal Curriculum Inquiry is currently threatened by the lack of funded support.

The dissemination of research findings to schools has some limited provincial expression in local practical publications. It is financially impossible for universities to properly maintain either practical or theoretical dissemination mechanisms. Some form of national level enquiry with subsequent financial support would be valuable.

RECOMMENDATIONS FOR SSHRC: SUBSTANTIVE POINTS

Elements in a Funding Perspective

Curriculum is a field of practice [1.12] set in a context of social purpose [1.11]. Accordingly

1. SSHRC should be prepared to set research priorities in the national interest. These interests should be specified in broad terms, and it should be the responsibility of researchers to demonstrate the connections between their proposals and national priorities.
2. SSHRC should put a high priority on research which is, at once, potentially practical and generalizable. Research proposals which

fail to conceptualize their practical possibilities should have low priority; so should proposals which fail to demonstrate their possibilities for generalizability and for enhanced theoretical understanding. Again, it should be the researcher's responsibility to demonstrate that his proposed research satisfies this dual practical/theoretical priority.

Curriculum studies use theory from other areas of education and the social sciences [1.133 and 1.134]. This introduces conceptual biases, for example, behaviourist approaches. Accordingly,

> SSHRC should acknowledge this intellectual dependence in curriculum inquiry and should require that research proposals specify their theoretical predilections and the consequences these have for conceptualizing phenomena under study.

The restricted funding heretofore for curriculum studies means that research capabilities are disquietingly dormant throughout the country [0.1 and 4.1]. Many academics have not engaged in research since their own Ph.D. studies, and very few people have experience with large-scale funding. Those who have pursued research careers tend to feel that their academic prestige depends upon foreign publication and attendance at foreign meetings. Admittedly, this situation is changing rapidly through the efforts of the Canadian Society for the Study of Education. Accordingly,

1. SSHRC, while moving boldly into the funding of national curriculum studies, should do so with caution and with an eye to quality proposals with demonstrated management plans.

2. SSHRC should encourage the reporting of research at Canadian meetings through travel funds designated for that purpose.

3. SSHRC should, in cooperation with the Canadian Association for Curriculum Studies, create annual, honourary awards for outstanding curriculum research studies.

4. SSHRC should, in cooperation with the Canadian Association for Curriculum Studies, create honourary awards for outstanding Ph.D. dissertations in curriculum.

Need for Canadian Based Research

Because of its dependent status the Canadian curriculum has been heavily influenced by foreign developments. Accordingly,

1. SSHRC should put a priority on research aimed at knowledge of Canadian curricula, for example, historical, comparative and critical studies of Canadian curricula.

2. SSHRC should put a priority on developmental studies in areas where it is important to develop indigenous Canadian curriculum programmes, for example, in social studies and in science and technology curricula.

3. SSHRC should be prepared to concentrate its research resources in selected theoretical areas depending on the strengths of particular researchers and the likelihood that with proper support their work would achieve international prominence.

4. SSHRC should, with respect to the latter point, provide funding levels that permit academics to be released from other duties.

5. SSHRC should focus its research attention on areas of long-term payoff. In setting such priorities they need to do careful background studies of provincial funding of the sort hastily described in the Final Report.

6. SSHRC should create mechanisms to foster cooperative inquiry, both theoretical and reform-oriented, across the country. On balance, reform-oriented research will require comparatively greater levels of support.

An Expanded Definition of Curriculum Studies

The Final Report offers a theoretical account of the character of curriculum and of curriculum studies [0 and 1.2]. This was done because traditional research paradigms in the social sciences and education are often inimical to the subject matter and method of curriculum studies. We do believe that if the special character of curriculum studies is not recognized by the SSHRC it will inappropriately shape the field through its funding practices. Accordingly,

1. SSHRC should acknowledge equal responsibility with the curriculum research community in setting appropriate research problems, methods and subject matter for inquiry.

2. SSHRC should identify the four forms of inquiry - logistic, operational, problematic, dialiectic -- in its funding specifications, and it should ensure, through its review criteria, that academic fads in favour of one or another form does not result in biased proposal evaluation.

3. SSHRC should particularly encourage dialectical studies since they tend to be least attractive to the short-term, procedural, funding interests of provincial governments [1.111].

4. SSHRC should identify the three main subject matter types of curriculum inquiry -- curriculum theory and criticism, curriculum preoccupations, subject matter sub-specializations -- in its funding specifications; and it should ensure, through its review criteria, that each type is encouraged.

Problem Areas and Topics in Need of Research

Curriculum Theory and Criticism.

1. SSHRC should give priority to historical, theoretical and critical research which would yield an understanding of what knowledge can, legitimately, be imported across school-system, provincial, national, and international borders and what knowledge should be acquired and used within a particular socially prescribed context. Illustrative historical questions are as follows:

   a. What has been the influence of Herbartianism in Canada?

   b. What has been the significance of foreign influences (French, British, American, European) on Canadian curriculum ideologies?

   c. What role have religious and linguistic diversity and conflict played in shaping curriculum policy and development?

2. SSHRC should encourage critical studies of the philosophical, psychological, sociological, political and other presuppositions embodied in our curriculum practices.

3. SSHRC should encourage similar critical studies of curriculum enquiry itself with an eye to exposing the conceptual and ideological bias in curriculum knowledge.

4. SSHRC should encourage even the most theoretically oriented research to speculatively elaborate on the practical possibilities entailed by particular theories and lines of research; the matching of these into more or less compatible mixes; and the making available of this work to practitioners [1.15].

5. SSHRC should initiate a special curriculum research programme devoted to the education of case study reporters much in the spirit of high level national monthlies such as The Canadian Forum or the Atlantic in the United States. Case study reports are, simultaneously, theoretically provocative for researchers and practically generalizable for practitioners through the vicarious experience they permit.

6. SSHRC should encourage high-level, developmentally oriented research aimed at readying theoretical resources for practical development use [1.123]. There is less need to support straightforward applied and deductive studies aimed at translating theory into practice [1.123].

7. SSHRC should encourage the study of practitioners' deliberative practices as they integrate theoretical professional development resources into their teaching and learning practices [1.126]. Very little is known of the formal and informal aspects of personal professional development.

8. SSHRC should, in cooperation with the Canadian Association for Curriculum Studies, establish a cyclical review of research. Such reviews should yield critical interpretations of the literature useful in advancing the field and in revising funding priorities.

9. SSHRC should establish a special fund to encourage academic textbook development in order to encourage an indigenous scholarly curriculum textbook industry.

10. SSHRC should encourage research on graduate studies in curriculum.

Curriculum Preoccupations.

1. SSHRC should support high-level curriculum development research of two main types:

   a. "Prototype" curriculum development over extended time periods in which the theoretical parameters of a possible curriculum are conceptualized, organized and field tested [2.21].

b. Descriptive and critical studies following upon curriculum developments such as the study of new programmes on inquiry approaches to English education.

Curriculum evaluation and curriculum implementation tend to be two areas which receive extensive, short-term, provincial funding. Much of this research is hidden in provincial archives. Accordingly,

1. SSHRC should encourage research archiving and communications studies for purposes of developing mechanisms for bringing this work to light.

2. SSHRC should give priority to curriculum evaluation and implementation research undertaken from the school's perspective rather than that undertaken from the perspective of researchers, policy makers and administrators. The latter tends to receive comparatively more provincial support because mission-oriented agencies fund what they want done and tend to be indifferent to the lives and perspectives of those affected.

3. SSHRC should ensure that procedural knowledge is recognized as a legitimate goal of curriculum development and implementation research.

4. SSHRC should support critical studies of ongoing provincial assessments and should encourage interest in national assessments and international achievement studies such as the IEA.

5. SSHRC should encourage curriculum-policy-analysis research either through the educational community or through existing policy institutes such as the Policy Research Institute at the University of Toronto.

6. SSHRC should sponsor a conference on the need for, and character of, curriculum policy research.

7. SSHRC should encourage the study of modes of enquiry used locally, provincially and nationally for policy initiatives. We need, for example, studies of the methods used in royal-commission style investigations as well as studies of the methods used by consultant researchers in crisis-research policy studies.

8. SSHRC should put a priority on studies of the personal and practical knowledge of practitioners and of the interface of this knowledge with theoretical knowledge.

School Subject Matter Subspecializations

There is a host of questions appropriate to the various subject-matter fields. Many of these are defined in terms of curriculum theory and criticism and in terms of the various preoccupations. Others are special to the subject matter field itself. Many of these are noted in the background papers and readers are referred to these for appropriate listings. In general,

1. SSHRC should ensure that research proposals in the subspecializations acknowledge general curriculum concerns found in theory, criticism and the preoccupations. Likewise, researchers in theory, criticism and the preoccupations should be required to treat their research as content-bound.

2. SSHRC should encourage descriptive and interpretive studies of school curriculum practices in the teaching of Social Studies, English, and so forth [1.126]. Too many curriculum plans and too much curriculum research proceeds without a base of knowledge of what actually occurs in schools.

Each subspecialization has its own special research needs. Readers are encouraged to review the appropriate background papers identified in Appendix 1. The following research priorities in English education illustrate the kind of work that might be encouraged in the subspecializations:

1. Processes of language development and use, and the interaction of these processes with contextual factors such as parent-child and teacher-child interaction, home and school environments, and electronic media.

2. The relationship and interaction of the various language skills of reading, writing and speaking, both with each other and with cognitive development.

3. Empirical studies of the nature, processes and effects of literature learning, and of the relationship of literary reading and study to other aspects of linguistic, cognitive, aesthetic and personal development.

4. Normative and ethnographic studies of Canadian schools and classrooms as language environments in order to identify contextual factors influencing language development, to generate hypotheses for instructional research, and to examine the interaction of language development and use with learning across the curriculum.

5. Large-scale, state-of-the-art projects to provide a forum for the integration of theory, research and practice in the teaching of English and language arts.

6. Efforts to increase the effectiveness and dissemination of Canadian research including

   a. Projects that involve the use of teachers as classroom researchers.

   b. Research-based, in-service, teacher-education projects.

   c. Support for research sections in the programmes of professional teacher conferences.

   d. Support for Canadian journals for teachers.

   e. Provision in the funding of applied research to the effect that the outcomes of such research must include at least one publication directed to practitioners.

New Areas

1. SSHRC should be alert to the curricular consequences of new social developments and areas of study, for example, micro-computers, video-disk technology, aging.

2. SSHRC should, in the communications example noted, fund software studies by curriculum people and should study the larger social effects of the technology.

RECOMMENDATIONS FOR SSHRC: OPERATIONAL SUPPORT

Support Systems

Curriculum studies, perhaps more so than other areas of social science inquiry, needs structural support for it to flourish. The field is subject to too many practical and academic fads to make it possible for long-term inquiry to proceed when financial support originates with local agencies tied to current problems. By the time a significant number of scholars express an

interest in an area, the field may have passed them by on its way to something else [1.134]. Furthermore, much developmental curriculum work, particularly if it is conducted at a national level, requires stable teams of people in communication with one another. Accordingly,

1. SSHRC should put a high priority on the support of academic curriculum centres which have a demonstrable national interest. These centres would simultaneously serve national interests and promote selected indigenous Canadian academic strengths.

2. SSHRC should give consideration to the development of a national curriculum centre possibly along the Israeli or Australian lines where national studies are coordinated by members with cross-appointments to the centre from universities throughout the country.

3. SSHRC should initiate the development of national indices of Canadian research, development and implementation, and national data banks.

4. SSHRC should consider supporting the development of a cross-Canada data trunk line.

5. SSHRC should act to support Canadian curriculum publications. Its first priority should be to ensure that Curriculum Inquiry is able to maintain a Canadian publication base.

Retraining/Upgrading

Shifting school priorities and, accordingly, shifting university priorities as a result of demographic changes in recent years have resulted in re-education needs both in the field of curriculum and in corresponding academic faculties. Accordingly,

1. SSHRC should sponsor periodic research on shifting curriculum manpower needs.

2. SSHRC should give selected universities special grants to launch retraining programmes.

3. SSHRC should make available special funds to support individuals' re-education costs.

4. SSHRC should be prepared to underwrite manpower costs of research, thereby strengthening graduate programmes in selected areas. The need for post-graduate programmes in selected areas could very well be one of the criteria built into the funding of high-priority research.

CRITERIA

Much of what has been said in previous pages could be translated into statements of criteria. We wish here only to draw attention to several additional points:

1. SSHRC should ensure that adjudication of curriculum proposals are well represented by curriculum scholars who recognize this practical character of the field and the consequences of this for proposed research. Traditionally, educational research has been dominated by experimental psychology, a field whose methodology has little to offer curriculum studies.

2. SSHRC should ensure that traditional criteria of quality be rigorously applied. SSHRC would make a mistake if, after deciding to support more curriculum research, it lowered its standards in an effort to fund studies.

3. The ethical criteria currently used by SSHRC should be properly and fully adhered to. For example, there are too many instances of curriculum research in school systems where investigators have gained access to sensitive data by virtue of "friendly" tactics, only to write scathing academic criticisms. We believe that supportive criticism should be part of practical studies but that the researcher has the responsibility to discuss these reports openly with co-participants.

   To help alleviate situations like those above, the following suggestions are presented as items to be included in proposals submitted for funding:

   a. That negotiation of entry to, and exit from, systems be carefully outlined and steps for ensuring full knowledge of all parties be clearly specified.

   b. That participants be treated as co-researchers where possible (e.g., development of curriculum) and that proposers indicate their strategies for treating participants as co-researchers rather than subjects.

c. That deception be avoided. We believe that hiding the purposes of research is unethical and against the long term interests of curriculum inquiry.

4. SSHRC should call a mini-conference on the problem of ethics in curriculum research.

Dissemination Procedures

In addition to comments made in our section on Impact and in our discussion of the support needs of journals and the importance of rewarding research excellence, we wish to note that SSHRC has taken positive steps in recent years to support conferences and Canadian academic travel.

1. SSHRC should ensure that its support for Canadian conferences and academic travel be expanded as the field of curriculum studies solidifies and begins to develop an indigenous Canadian character.

2. SSHRC should give consideration to the initiation of a magazine-style publication on curriculum practices and innovations across the country to supplement academic publication outlets. The support of academic publications should, however, be its first publication priority.*

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APPENDIX 1

BACKGROUND PAPERS

1) Carswell, R.J.B., "Six Urgent Questions in the Teaching of the Social Studies in Canada." (Comment by G. Ouelette.)

2) Clingman, A.E., "State of the Art Review in Music." (Comment by R. Fowler, F. Churchley.)

3) Fillion, Bryant, "Research in English and Language Arts: The State of the Art."

4) Gray, James U., and Chalmers, F. Graeme, "An Overview of Art Education Research in Canada." (Comment by M. Travis, M. Pitre.)

5) Kormos, J. (Ed.), "Curriculum Evaluation: Observations by Merle Wahlstrom, Joel Weiss, Ross Traub, Les McLean."

6) Kormos, J. (Ed.), "Curriculum Theory: Observations by Ted Aoki, Pat Babin, Len Berk and Antoinette Oberg."

7) Leithwood, K., "Curriculum Development and Implementation." (Comment by A. Oberg.)

8) Moody, Peter R., and Carre, F. Alex, "A Status Report on Research in Physical Education for SSHRC." (Comment by J. Jackson.)

9) Nash, B.C., "State of the Art of Early Childhood Education in Canada." (Comment by M. Mayfield.)

10) Pratt, David, "Curriculum Design in Canada." (Comment by A. Oberg, O. Robichaud.)

11) Savoie, Rodolphe, "Reactions to Paper by Dr. D.P. Young."

12) Shapiro, Jon, "Reading Research in Canada." (Comment by M. Mickelson.)

13) Sherrill, James, "Mathematics Education Research in Canada." (Comment by R. Bourgeois.)

14) Stern, H.H., "Second Language Pedagogy and Educational Studies."

15) Tomkins, George, "Status Report on the State of the Art in Canadian Social Studies Research." (Comment by R. Fowler, A. Godin.)

16) Young, D.R., "State of the Art - Vocational Education."

APPENDIX 2

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Chapter 6

EARLY CHILDHOOD EDUCATION

Andrew Biemiller*

WHAT IS EARLY CHILDHOOD EDUCATION?

The field of early childhood education normally includes all types of group education and care for children from early infancy through approximately ages six to nine. Although traditionally associated with kindergarten, nursery schools, and day care, recent developments in infant and toddler group care and intervention programs (see Fowler, 1978 and Kilmer, 1979) have lowered the ages of children included in "early childhood." At the same time, a growing trend towards applying early childhood education methods to children in grades one through three[1] and the growth of day care for elementary school children (Health and Welfare Canada, 1978) have raised the ages of children who are, in at least some cases, involved in "early childhood education."

From the preceding statement, it can be seen that "early childhood education" is partly characterized by certain assumptions or principles about how group education and care programmes for young children should be conducted. These assumptions are as follows:

1. There are substantial maturational differences in children's capacities to deal with their social and physical environment.

2. There are substantial individual differences in the rates with which various capacities mature.

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[1] For example in Ontario, "Early childhood education" is explicitly considered by the Ministry of Education as encompassing junior kindergarten through grades three. In practice, many boards of education have recently been appointing curriculum coordinators and consultants with specific responsibility for this age range.

3. In addition to capacity differences, there are marked individual differences in the effectiveness and style of children's social and emotional functioning. These aspects of the child's development are related to, and are as important as, growth in capacities and skills.

4. An implication of the first three assumptions is that teachers of young children must be prepared to adapt their programme individually to the levels of development and functioning of each child for whom they are responsible.

5. Much of the child's acquisition of new skills, self-control, and social effectiveness occurs through self-initiated activity rather than teacher-directed activity.

6. Therefore, the role of the teacher is to provide appropriate materials for individual children and small groups of children to interact with, and a safe, secure environment in which they can function.

7. Finally, the role of the teacher includes concern for the child's physical development as well as intellectual, social, and emotional development.

These assumptions about the education of young children probably evolved in response to developmental realities -- maturational changes are much more dramatic and occur more rapidly during the early years than later (with the exception of puberty). The nature of young children's knowledge is markedly different (see Piaget, 1971; Case, 1978), and, probably for neurological reasons (Luria, 1973), it is very difficult directly to "teach" young children in ways that it becomes possible (if not always desirable) to teach children over ages six, seven, or eight (Flavell, 1976). Finally, the realities of day care have led to greater awareness of, and concern for, various aspects of physical health as well as emotional and intellectual development. In short, early childhood educators truly concern themselves with "the whole child."

Having noted these assumptions about what early childhood education ought to be like, I must hasten to add that by no means would all professionals and researchers concerned with children in the age range covered subscribe to them. Furthermore, some practitioners who subscribe to these assumptions in theory do not carry them out in practice.

In fact, one of the major research trends of the present period involves a serious theoretical and empirical reappraisal of these assumptions and their implementation. (See for example Rubin, 1980; Goldhaber, 1979;

Wachs, 1981; Franklin and Biber, 1979; Bereiter and Kurland, 1980).

CANADIAN CONCERNS IN EARLY CHILDHOOD EDUCATION

A number of direct Canadian concerns about the education and care of young children derive from the sequelae of the revolution in women's roles and family disintegration. A number of other concerns derive from educational and social policies, and educational practices which lack an adequate base in research anywhere, and especially in a Canadian context. Despite this lack, these policies and practices are being implemented in several provinces.

Finally, there is a need for continuing concern with theoretical innovation, development, and evaluation programmes in order to maintain or strengthen the effectiveness of both our programmes for a very wide variety of young children affected by the social trends noted above, and the effectiveness of the institutions which prepare staff to work in these programmes. In this context, it is worth noting that at the present time, it is virtually impossible to obtain doctoral level training in Canada specifically in early childhood education.

Sequelae of the revolution in women's roles and family disintegration

There is a widespread public awareness of the fact that far more women, including mothers of young children, are working. The substantial rise in the divorce rate also means that far more young children are being raised by single, often working, parents. The net effect of these social changes, desirable or not, is that young children, from infancy onwards, are increasingly likely to spend substantial portions of their early formative years in group care and education settings. In addition, increasing numbers of children are placed in private home day care settings which have also become a recognized aspect of social policy (Ontario Ministry of Community and Social Service, 1980) and research (Prescott, 1973; Clarke-Stewart (interview); Golden et al., 1978).

This growing demand for extra family education and care leads to a sharply increased need for study of how effectively to implement care which

is at least as adequate as the traditional family-centred child-rearing it is replacing. At present, practical decisions, reflected in provincial regulations (e.g. Ontario Day Nurseries Act, Alberta Early Childhood Services) are frequently based on one or two studies, usually carried out in the United States.[1] There is a strong need for a broader base of studies, located in our diverse Canadian culture.[2] We need both more study of basic conditions of good care, and of applications within different groups and settings. A particular need is for longitudinal studies of children experiencing various combinations of home and group care. Of perhaps equal importance is the need to evolve effective ways of combining care and education for children in elementary schools who are even more subject to working parent and single family homes. This is a largely uncharted area of social practice, although models do exist in the form of camp programmes, boarding schools, and the growing provision of various types of "after school" programmes. A major problem for children of kindergarten age upward is the relationship of school programmes to other aspects of care and the attitude of elementary school staff towards "day care" children. (This concern was expressed in all provinces I visited.)

Implications of changing social policies and educational practices

Several major social policies concerning young children in group settings now being widely implemented or experimented within Canada rest on a rather shaky foundation of research and evaluation. Notable among these are the practice

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1 For example, the movement towards increased private home day care in Ontario was largely based on Prescott's (1973) studies in the Los Angeles area, while more recent Ontario regulations, concerning day care organization now under review, are largely based on the U.S. National Day Care Study (Travers and Ruopp, 1979). Similarly, Alberta's new kindergarten programme reflects practices evolved in Head Start.

2 B.C. Nash of the OISE, has noted that we differ markedly from the U.S. in valuing cultural differences rather than viewing them as handicaps.

of "mainstreaming" (introducing various categories of seriously handicapped children into day care centres and schools with non-handicapped populations), the increasing interest in early identification and prevention programmes, and experimenting with the application of "early childhood education" methods in grade one, two, and three elementary school programmes.

Mainstreaming

The growing concern with "mainstreaming" or incorporating both mentally retarded and physically handicapped children in programmes for "normal" children, was reported to me in all provinces I visited. Some development work is going on in Alberta, Manitoba and Ontario, most notably at the University of Manitoba. However, most of the professionals I spoke to expressed strong concern that "mainstreaming" was being implemented or encouraged on a fairly wide scale with little examination of the conditions necessary for success. The suspicion was expressed that, while mainstreaming could be effective under some conditions (Karnes and Lee, 1979), it was in some cases being used as a cost-cutting procedure rather than as a therapeutic one. Needed are an examination of current practices and outcomes, research on methods and conditions of mainstreaming, and development of training procedures for day care and school staff who will be involved. (Professor L. Brockman at the University of Manitoba has been pioneering work in the training and development area.)

A related development in elementary school operations has been the integration of "special education" or "learning disabled" children into "normal" classrooms. The considerations mentioned above apply here as well.

Early Identification and Prevention

The term "early identification" covers a multitude of different issues ranging from medical tests now routinely performed on infants (e.g. screening for phenylketonuria, to medical and psychological assessments now being carried out with four, five and six-year old children in the hope of identifying and remediating learning disabilities. Some form of the latter have recently been

mandated for all schools in the Province of Ontario.

The field of "early identification," particularly in non-medical areas, has been questioned from several different viewpoints. Sameroff et al. (1975) have summarized evidence suggesting that children's post-natal family environments interact with pre-natal and peri-natal conditions (e.g., prematurity), which predispose children to suboptimal development. At the present time, substantial amounts of research are underway in Canada on "infant stimulation" (Shipe, in progress; Pike, in progress; Kysela, in progress; Minde, in progress). Outcomes are not yet clear. With regard to screening children at ages three to six for "learning disabilities," questions have been raised concerning what cognitive skills should be assessed (White, 1978), the accuracy of predictions (MacIntyre et al., 1980), whether appropriate characteristics are being assessed (particularly social and emotional characteristics) which may significantly affect later school functioning (Biemiller, 1981; and comments by many of the professionals I interviewed), and whether, even if predictions are reasonably accurate, we have available any effective interventions. With regard to the latter question, it appears clearly valuable to screen children for vision, hearing, and other medical problems for which effective treatments are readily available (eye glasses, hearing aids, or treatment of hearing disorders, etc.).[1] It is less clear that early identification of academic deficiencies are either highly predictive of that we know what interventions to make.[2]

Some recent Canadian research (O'Bryan, 1980) suggests that early (kindergarten) identification programmes can have a beneficial effect on later educational outcomes. Other findings question this conclusion, or suggest that non-academic aspects of children's development should be included in both assessment and intervention. In particular, the development of social skills (e.g. Levin and Rubin, in press), temperament (Biemiller, 1981b; Rutter, 1979), and various aspects of self-control (e.g. Meichenbaum, 1977) should be considered. In general, as with mainstreaming, early

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[1] It is important to note that medical screening should be continued on a regular basis since vision, hearing and other problems often develop at later ages. It is also important to monitor the quality of screenings as there is evidence that many routine screenings can be inaccurate.

[2] One hypothesis that deserves more examination is that simple delay of entry into academic programmes may solve many academic problems.

identification in relation to schooling appears to be an area requiring more careful development and evaluation before it is adopted on a wide scale.

Applying early childhood methods in the primary grades

Applying early childhood education principles in primary grades has long been advocated by many professionals in the field (including all whom I spoke to in my interviews in Canada), and is in fact being done increasingly in some Canadian school boards, especially in Ontario. There has been virtually no research conducted on this practice in Canada (the largest study available is the U.S. Project Follow-Through Evaluation Abt Associates, 1977), which has had conflicting results and interpretations (see House and Hutchins, 1979; Bereiter and Kurland, 1980). Again, we need a base of careful evaluation, involving a number of different aspects of children's development, in order to determine whether and how to implement this type of change in educational practice.

STRENGTHENING CANADIAN SKILLS IN THEORETICAL, DEVELOPMENT, AND EVALUATION WORK IN EARLY CHILDHOOD EDUCATION

One of the paradoxes of the field of early childhood education is that with few exceptions (most notably, University of Alberta) most research in the field tends to be conducted by psychologists in departments of psychology and family studies, rather than by staff in faculties of education, and in particular, by staff responsible for teaching methods of early childhood education. Thus, while there is considerable research strength in early childhood education in parts of Canada (to be discussed in later sections), there are few places where this research strength is closely connected to the process of preparing professionals who work with young children. The net result, expressed by most of the university personnel I spoke with, is that a large proportion of people working in the field tend to have a negative attitude towards change, research, or any objective approach to evaluating the field. I would not wish in any way to suggest that the current valuable basic and applied research now being conducted outside faculties of education and community colleges[1] be reduced. I do believe that preparation of teachers and teachers of teachers should go on within an environment in

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[1] Most day care personnel are trained in community colleges.

which active research, development, and evaluation programmes are a part of the students' environment.

RESEARCH SUPPORT IN EARLY CHILDHOOD EDUCATION

Personnel and funding

Paradoxically, early childhood education, in comparison to other population-defined fields of education, is probably the least well funded and least well provided with research-trained staff (at least in faculties of education and early childhood education programmes in community colleges) while, at the same time, early childhood education has some of the most advanced (theoretical, methodological, and practical) education research going on in Canada. This paradox is related to the fact that much early childhood education teacher preparation is based in faculties of education and community colleges, while much of the research is conducted in psychology or family studies departments.

Most early childhood education research and programme development funding reported to me comes from (1) provincial ministries of education and ministries of community and social services (usually responsible for day care); (2) provincial and national associations for mental retardation and mental health; (3) university support services funding (primarily for operation of laboratory schools and television production services); (4) private foundations; and (5) federal sources including Health and Welfare Canada, and the Natural Sciences and Engineering Research Council.[1] By far the most predominant source was provincial agencies. Much, though by no means all, of this funding involved contracts for finding answers to specific provincial concerns, e.g., B.C.'s Kindergarten Needs Survey; Ontario's Study of Characteristics of Children Entering the Public School System (Morgan, 1979) and Effects of Half Day, Alternate Full Day, and Full Day Kindergartens (Biemiller, 1979). Some

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[1] This Council provided funds for development of new play equipment for use with normal and retarded children.

provincial funds have been provided for more general research (e.g., Quebec's Formation de Cherchers et Action Concertee -- a branch of the Quebec Ministry of Education -- has funded university-initiated projects and centres of early childhood education and child development at Concordia, Laval, and other universities; Ontario's Education and Community and Social Services have funded specific, university-initiated research and development projects). SSHRC reports having funded only two projects in early childhood education in the past five years. I have been unable to determine what these were. Some additional SSHRC funds have been used through general research funding distributed through universities.

The impact of early childhood education research on practice

The impact of research in early childhood education on educational practice has been large in the sense that school practices have been adopted on the basis of American research (particularly compensatory education and mainstreaming) but small in the sense that Canadian research and development has not influenced Canadian practice. The largest example of applied Canadian research that I can point to is the widespread use in Ontario of the Windsor Early Identification Project (O'Bryan, 1975) and related Ontario-funded research.

Another potential example of dissemination and application is a project of M. Baillaregon's at Laval, which will involve preparation of a book that will review applicable early childhood education research in Canada and elsewhere (primarily elsewhere) for use by French-speaking teachers and student teachers in Quebec. This project is currently under review for provincial funding.

One other example of dissemination of a Canadian-developed early childhood programme is the recently published ECHO programme developed by B.C. Nash of OISE's North Eastern Field Centre in North Bay (Nash, 1981). This programme, which emphasizes the development of self-directed learning and social skills in children, was developed collaboratively with a large number of teachers throughout Ontario on a shoestring budget. To assess the programme and extend it to older children would require increased time on the part of the principal investigator and staff and travel time for observers, but funds are not

not available.

In general, it seems clear that there is a great need for the support of applied work that will translate individual studies and demonstration projects into large-scale applications. A growing number of writers are expressing the need for a cautious, carefully monitored approach to this process, unlike the wholesale adoption of programmes that has characterized the American experience in Head Start, mainstreaming, and possibly our own work in early identification (House and Hutchins, 1979; Takanishi, 1979; Karnes and Lee, 1979). At the same time, there is a suggestion that massive implementation studies such as the Project Follow Through experiment may represent unmanageable and inefficient use of available research resources. This point will be taken up in the next section.

RECOMMENDATIONS FOR SSHRC -- PRIORITIES IN EARLY CHILDHOOD EDUCATION RESEARCH IN CANADA

The need for Canadian research

Much of the need for work in this area was outlined in the first section: the growing need for care and education programmes for young children as a result of changing family patterns; the need for research on practices currently being implemented (mainstreaming, early identification, early childhood methods in grades one to three); and the need to introduce more research-oriented approaches to teacher-preparation faculties. These concerns all relate to the problem of adapting or generating educational and child-care skills and knowledge that are specific to various Canadian contexts. As Bronfenbranner (1979) and House and Hutchins (1979) have pointed out, most applications of social science knowledge are fairly situationally specific, being affected by cultural, demographic (including numbers and ages of children, numbers with working parents or in single parent families, etc.), climatic, and other aspects of the social and physical environment. In short, what may be an effective, appropriate programme in Vancouver probably will not be in Chicoutimi, or St. John's, although all would probably share certain common features.

As a major nation, we also have both an obligation and an opportunity to contribute to the general growth of knowledge related to this and other

fields of education, rather than simply depending on other countries for theoretical and applied developments (e.g., the U.S. in the case of compensatory education and mainstreaming, Britain in the case of modifying primary grade programmes). At present, in the field of early childhood education, there are at least two areas in which Canadian researchers are presently at the forefront of international developmental and educational research: (1) research on the development of social skills and related social and emotional functioning including aspects of risk and early identification; and (2) research on the nature of intellectual development in the early childhood years, especially ages two to five.[1] In these areas, we have an opportunity to build on our strengths, as opposed to remediating our weaknesses.

The Relationship Between Theoretical and Applied Research

The distinction between theoretical and applied research, in early childhood as well as other aspects of education, is not as sharp as many statements imply. This is perhaps best illustrated by the activities of the other federal research funding councils -- Natural Sciences and Engineering -- and Medical Research. In these areas, it is recognized that good applied research should be based on recognized "basic" knowledge, but has value to society in its own right. Furthermore, work on applied problems often leads to discoveries or questions of a "basic research" nature.[2]

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1 Some of the latter work, primarily by R. Case at OISE, C. Brainerd at the University of Western Ontario, and their students, has yet to be translated into educational programmes. Work by A. Doyle at Concordia, and Rubin and colleagues at several universities on learning in preschool play settings has had closer connections between research and practice. Integration of these two bodies of theoretical work and application in learning settings should yield substantial gains in preschool and early primary learning and teaching (Case, 1978; Levin & Rubin, in press; Rubin, in press; Rubin & Peplar, 1980).

2 This has been the case in some of my own "applied research conducted for the Ontario government (Biemiller, 1978, 1981b). In these studies, temperamental characteristics (Thomas & Chess, 1977) proved to play a large role in children's functioning in school settings. This finding leads not only to the applied problem of how to deal with temperamental differences in classrooms, but to the need for more "basic" research on the temperamental differences in children.

Federal/Provincial Jurisdictions

In general, this topic was not perceived to be a problem by any of the professionals I interviewed, including the representatives of provincial ministries. At the University of Alberta, staff noted that all applied research conducted in schools or publically administered child-care programmes must receive the approval of the school boards -- even for provincially funded contract work -- or the agency responsible for children in the settings involved as well as parental approval. This alone should guarantee that research which is unacceptable under provincial or local guidelines will not be conducted.

As André Fortier (1981) has pointed out, provincial funds, which have been the main direct or indirect source of early childhood research funding, are likely to be less available in the future as a result of changes in shared-cost funding. If research in early childhood education is to continue, and particularly if it is to expand, it is clear that other sources, primarily federal, will have to be found.

Problem areas and Topics in Need of Research

Throughout this chapter, I have repeated several major topics in early childhood education requiring research attention. These are:

1. Research, development, and evaluation of optimal ways of providing care and education for children both before and during the elementary school years.

2. Research, development, and evaluation of programmes for children and programmes for preparing staff in the area of "mainstreaming" handicapped children into environments which primarily serve non-handicapped children.

3. Research, development, and evaluation of programmes for children and programmes for preparing staff in the area of early identification and intervention involving social, emotional, and intellectual functioning. Particular stress should be given to evaluation of the intermediate (one to three years) and long-term predictiveness of measures as a function of the ages at which they are administered, to the role of assessment of the child's environment in conjunction with assessment of the child, and especially to the actual effectiveness of interventions over intermediate and long terms. In relation to "early intervention" it is worth noting that although "compensatory education"

appears to have fallen somewhat out of favour, Professor Benjamin Bloom[1] reported to me that his and others' recent research into human learning potentials indicates that we continue to fall far short of what can be accomplished under optimum learning conditions.

4. Research, development, and evaluation of modifications of elementary school programmes in grades one through three, again including study of staff preparation and evaluation of intermediate and long-term consequences.

A number of more specific types of studies follow from these major topics. They are listed below.

1. Evaluation Techniques. Virtually all the professional I interviewed stressed the need for developing and validating new methods of assessing on-going and long-term aspects of children's functioning in early childhood education programmes . This concern is also reflected in recent literature reviews (Goldhaber, 1979; Takanishi, 1979; House and Hutchins, 1979; Zimiles, 1977; De Vries and Kohlberg, 1977; and Bronfendrenner, 1979). In particular, both the professionals interviewed and the reviews stressed the importance of developing measures relating to non-academic aspects of functioning -- social skills and problem-solving, various aspects of self-concept, self-confidence, and self-esteem, independence of self-direction, and emotional development. The teacher as a source of information was stressed by some sources (e.g. Hoge, in press; Fair et al., 1978; Biemiller, 1981, in progress).

2. Programme Evaluation. The field of early childhood education suffers from a well-established conventional wisdom -- one interviewer described it as a "missionary approach." Many teachers and professionals in the field will state that they "know" what is best for children and need no further information about this. At the same time, most of the professionals I interviewed expressed a strong need to test conventional assumptions and study carefully the effects of different approaches to child care and education on a wide range of variables. Accomplishing this will require improved evaluation techniques as outlined above.

3. Relationships Between Families, Child Care Programmes, and School Programmes. This topic was raised by a number of different interviewees and reviews (see point #1 above) in several different contexts. Some expressed concern about the effects of attitudes towards "day care" children and programmes held by public and separate school teachers and the relationship or "seam" between different types of programmes

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[1] Bloom's book, Stability and Change in Human Characteristics (1964) provided much of the theoretical foundation for Project Head Start in the United States.

which children participate in simultaneously (e.g. day care and public school) or successively (e.g. kindergarten followed by grade one).[1] Others suggested the importance of examining relationships between school or day care programmes and families, including the effects of day care on the family,[2] and ways of relating school programmes to our multi-cultural society. Still others noted growing evidence that successful intervention programmes of any type may depend on family changes as well as child changes.

Four other topics were suggested by one or two professionals and deserve careful consideration.

4. Staff at the University of British Columbia noted that while we tend to adopt American and some British practices readily, we are woefully ignorant concerning Japanese, Taiwanese, Chinese, Soviet, African and other approaches to early childhood education. For example, they noted that Japanese approaches to early skill instruction are highly advanced, as are Soviet approaches to the development of social skills and behaviour. They urged greater support for translation, international visits or exchanges, and research regarding the applicability of other cultures' knowledge of early childhood education approaches to our own settings.

5. Staff at Concordia University stressed the importance of various aspects of bilingualism in child-care programmes for bilingual communities (See Doyle, 1977, 1978; Panunto & White, 1979).

6. Researchers in Ontario and Alberta were concerned with the problem of early giftedness and appropriate programmes for such children. While in principle this should be an aspect of early identification and intervention, in practice early giftedness is often overlooked.[3] (See Roedell, Jackson, & Robinson, 1980, for a literature review and report of the only major study of this subject.)

7. The problem of sex role development and effects of having male as well as female teachers in early childhood settings has been explored at Concordia and deserves continued examination. (See Gold, Reiss, & Berger, 1979; Gold, Andres, & Glorieux, 1979.)

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1 At Concordia University the still broader question of the relationship between school or daycare and the environment at large is being examined (Jacobs & Jacobs, 1979).

2 One Alberta researcher referred to a process of "de-adultization" which is presently occurring in many children's lives.

3 Paradoxically, early giftedness can be identified more reliably than learning or emotional problems (Kohlberg et al., 1971).

OPERATIONAL RECOMMENDATIONS FOR SSHRC

Training, Retraining, and Graduate Programmes

Demographic trends, the introduction of new social and educational programmes, and the general weakness of early childhood education as an academic field in Canada all lead to the conclusion that substantial improvements and some expansion is needed in this area at the graduate level.

Demographic Trends. In British Columbia, Ontario, and Quebec, birthrates have increased sufficiently over the past two years to make earlier projections of day-care and elementary school staff needs within the next three or four years inaccurate. The same trend is probably occurring in other provinces. A substantial proportion of these births are to mothers over thirty, who may be more likely to seek day care than younger mothers. At the same time, higher rates of attrition are being experienced among teachers and day-care workers than expected. The net result will be another teacher shortage in a few years. Now is the time to begin training staff at the graduate level who can prepare teachers effectively when they are needed, rather than resorting to the methods used during the period of rapid expansion in the 1960's and early 1970's.

New Programmes. The new programmes discussed elsewhere in this report (mainstreaming, early identification/intervention, and modification of primary programmes), if continued, will require substantial in-service staff training if they are to have any hope of success. These again require availability of good graduate programmes in early childhood education for teachers and teachers of teachers.

The State of Early Childhood Education in Universities. At a time when there is a growing need for graduate-level studies in early childhood education, both to meet the needs outlined above and to carry out research

as outlined throughout this report, the state of graduate instruction in early childhood education, particularly in faculties of education where much of the needed teacher preparation and in-service work will occur, is really rather poor. Many of those I interviewed were discouraged about the poor status of their field within their universities and even within their own faculties! Furthermore, very few professionals in faculties of education, even with doctorates, have extensive training in empirical research methods, and those who do rarely get the opportunity to practice these skills.

Recommendations Regarding Training, Retraining, and Graduate Programmes. These considerations lead to three specific recommendations in the area of post-graduate education:

1. Provide funding for professors of early childhood education to obtain additional training in research techniques, current development and research experience, possibly on an "apprenticeship" model. This funding could include covering salaries or research leave for up to one year to develop research skills and supporting research training programmes in early childhood education at selected universities where education faculty personnel could both study methods and participate in on-going early childhood education research in any departments or faculties that are actively engaged in the field. Actually, such exchanges would also benefit researchers, especially those not from the field of education who often lack good contacts with the educational community or practical knowledge of the realities of educational work.

   This programme would be similar to the National Health Research Development Programme administered by Committee #47 of Health and Welfare Canada. Provision of grants under such a programme should probably be accompanied by a commitment from the recipient's faculty to provide an academic load that will permit time for research after completion of the grant programme for some specified period of time.

2. Establish a small number of doctoral-level programmes and interdisciplinary centres for research in early childhood education across Canada, and possibly some mechanism whereby personnel from these centres could meet annually to exchange experience on their current work. The crucial point here is to create a few locations in different parts of Canada where a "critical mass" of researchers concerned with early childhood education could work together. At present the "early childhood" staff of most faculties or univeristies is too small (typically two or three at most) to provide an adequate base for good doctoral-level graduate study or a strong research programme which could involve graduate students and professionals obtaining research experience (see point #1 above).

3. Encourage the development of integrated day-care and primary teacher education programmes. This is presently done on a small scale at the University of British Columbia (Faculty of Education), University of Toronto (Institute of Child Study), and possibly elsewhere. If the existing barriers between education and child care programmes are to be broken down, there must be an increasing number of professionals who are familiar with both.

Research Funding

As in all areas of educational research, lack of research funding was seen as a major barrier. In early childhood education (and probably all other work concerned with live teaching settings), there is a growing trend, mentioned by most interviewees, towards increased emphasis on observational techniques as a major data collection procedure. Observation, unfortunately, is expensive. Another major problem in originating and funding research in education faculties is staff time. Traditionally, education faculty members in most provinces have been expected to carry more teaching hours than members of most other university faculties. This discourages research. Until faculties change their ways, staff release time will have to be a necessary part of educational research funding. Finally, in many education faculties there are relatively few full-time graduate students available for participation in research and research assistantships. This means hiring research staff at regular wages.

The net result of all these considerations is that even relatively small projects can readily run into costs ranging from $25,000 to $75,000 per year (the cost of hiring one to three research assistants, staff time, travel, equipment, etc.) as well as university overhead, where required. Costs may be lower where graduate programmes are in place; money invested in implementing the previous recommendations made concerning graduate training could offset research costs.

In the course of my interviews, I discussed specific funding programmes, especially "targetting" research. The following recommendations arose from these discussions:

1. A majority (though not all) of the interviewees favoured some "targetted" research, though the process of selecting targets was a source of concern.

2. Specifically, in early childhood education, a number of individuals recommended a focus on "children at risk" -- including identification/ intervention programmes, research on mainstreaming, etc. This theme appears to capture a large proportion of current social concerns and research trends.

3. Other possible "targets" suggested include teacher-parent-child relations, adjustment of children to out-of-home care, language development, effects of family income on education, early development of skills, and cross-cultural educational studies. All of these would focus on the young child.

4. A possible approach to "targetting" would be to invite submissions from specific regions, groups of universities, combinations of universities and provincial agencies, or other groupings, who would propose a "target" for consideration for large-scale funding by SSHRC. This might be an appropriate mechanism for establishing interdisciplinary research in early childhood education as recommended above.

5. A related approach, used successfully in the United States, is the research consortium. Under this approach a researcher at one university is funded to create a consortium of researchers at various universities (and possibly other institutions) whose work will focus on a particular topic or target. While final approval of each project would rest with the funding agency, participation in the consortium would facilitate funding. Funds would also be available to bring together members of the consortium to report on work in progress. (Project Literacy, based at Cornell University in the late 1960's, exemplified this approach. This resulted in a large body of basic research on reading reported in Levin and Williams, 1971; and Gibson and Levin, 1975, as well as numerous technical reports ["Project Literacy Reports"] and journal publications. Psychologists, medical researchers, educational researchers, and sociologists all participated.)

One other issue that was raised at a number of centres involved the status of laboratory schools and demonstration projects. Many early childhood programmes in both faculties of education and departments of psychology operate laboratory schools for research, development, and teacher training. Barnett (1981) has reviewed Canadian laboratory schools and finds that many are currently threatened by budget cutbacks. Nash, in a background paper, suggests that laboratory schools may be particularly valuable for research on basic developmental research. I would add that laboratory schools may be necessary for careful study of family-school interactions which is often considered "touchy" by school boards yet continues to be a major concern identified by professionals in the field. While SSHRC cannot be expected to support laboratory schools by itself, perhaps some formula might be adopted whereby projects conducted in laboratory schools would provide a contribution --

perhaps 20 percent of other project costs -- towards the school. This would simultaneously help defray laboratory school expenses and encourage research usage of laboratory schools.

Many of those I interviewed professed scepticism about the possibility of early childhood research being funded through SSHRC. They pointed to projects rejected for want of experimental design criteria (which in some cases seemed inappropriate), scathing comments, rejections based on one bad review despite several favourable, etc. Others had simply concluded that SSHRC did not want applied proposals or proposals in education.

In order to encourage researchers to submit proposals for education research, they are going to have to have a higher expectation of success. Establishing a separate panel to review "education research projects" (which will be defined in the next subsection) might encourage educational researchers to apply. For a short period, I think it possible that emphasis on developing centres and consortia with specific commitments to involve, and in some cases to train, educational researchers may be a more effective approach.

Criteria for Assessing Early Childhood Education Research Proposals

High quality early childhood education research probably should place us in a position to objectively learn more about the seven principles outlined at the beginning of this review concerning maturational and individual differences in social, intellectual, and emotional functioning and learning, and their implications for teachers. This does not mean that the researchers need to subscribe to these principles, but that the researcher will contribute either to their improved application or to awareness of faults in the assumptions. Preferably, studies should allow for combined examination of assumptions about maturational effects and individual differences in intellectual, social and emotional growth and their interaction with environmental influences including approaches to teaching and care. Studies of the <u>effects</u> of early education and care programmes should generally only be considered where there is simultaneous study of the <u>process</u> of early education and care. There is too much evidence that we cannot simply assume that a "programme" is being carried out as described by teachers or programme designers (House and Hutchins, 1979;

Zimiles, 1977). Longitudinal studies of effects, incorporating process measures, should especially be encouraged. On the other hand, as indicated in the last section, there is a great need for studies concerned with development of improved evaluation measures and ways of studying classroom processes that may not, in their formative stage, be focused on effects of outcomes. (An example of this is the SSHRC-supported work on activity levels by Professor W.O. Eaton at the University of Manitoba.) In effect, many educators are suggesting that we need a better understanding of what is before we leap to what should be (Professor P. Jackson, interview; Takanishi, 1979).

Operational Suggestions for SSHRC

Several problems were repeatedly drawn to my attention:

1. Turn-around time at SSHRC is so slow that researchers need to allow a year between initial submissions and beginning work. This leads those who can obtain money easily to look elsewhere, and others to be discouraged.

2. Feedback to both reviewees and especially reviewers has fallen off in the past few years. Several people suggested that, not only should reviewers receive copies of all reviews and outcomes (this isn't always happening), but that titles and descriptions of rejected proposals might be published to provide information to the research community.

3. There was some concern over the issue of which committee, and sometimes which Council, would review a project. These decisions are presently made in Ottawa by SSHRC staff.

4. Several people suggested that in the days of Canada Council there was more of a process of "negotiation" between reviewers and reviewee. They felt this valuable process had disappeared.

In order to solve these problems (which appear to be general to education rather than specific to early childhood education, I suggest:

1. An initial review should be completed by SSHRC within six weeks of receipt of a proposal, and a second round (if needed) should also be completed within six weeks or less. (Honoraria might be paid only on reviews submitted within four weeks. Possibly SSHRC should fund automatically if they fail to reach a decision in eight weeks.)

2. As indicated above, reviewers' suggestions for modification should be allowed, and opportunity for reaction by proposers provided, but

within reasonable time limits. (I would not set a limit on the proposer's response unless there is a general deadline for funding decisions.)

3. Careful attention should be given to ensuring that reviewers and reviewees receive complete feedback.

4. Concerning the problem of which Council and committees shall deal with a proposal, I suggest that SSHRC develop careful definitions of types of projects being considered by each of its committees (including an educational research committee), and then allow the individual research proposer to designate which committee (and possibly sub-committee or review teams) should consider his/her proposal. This designation would not be subject to review. The researcher would take his/her chances with whatever review group he/she had designated. (In the case of studies going across areas or disciplines, the proposer would indicate more than one area, and a reviewer from each could be designated. Probably a single area should be listed as primary.)

Dissemination Procedures

Early childhood education researchers report feeling distinctly isolated. Typically forming a very small subgroup at each university (if they exist at all), they have little contact with fellow professionals in the field. There is also minimal contact between early childhood researchers in psychology and family studies departments, on one side, and education faculties, on the other. The former group tends to publish in the Canadian Journal of Behavioral Sciences, Child Development and books and other journals in the United States. Education faculty involved in early childhood research tend to publish in the Journal of the Canadian Association for Young Children (which does not publish detailed technical research articles) and may use the recently-established Canadian Journal of Early Childhood Education. In general, education faculty members publish far less.

What appears to be needed is increased personal contact through mini-conferences, exchange visits of staff, etc. In southern Ontario, early child researchers have been meeting biannually through an informal organization known as the Ontario University Laboratory Schools Association, to share current research activities and current problems in teaching teachers and lab school operations. Recently, representatives from Quebec have been included. Travel funding for similar groups in the east and west might be a worthwhile investment , where travel expenses are much greater.

Beyond this, increased communication between staff in education faculties and staff involved in early childhood research in other faculties is clearly needed. Regional conferences, specific encouragement for interdisciplinary research, and other mechanisms to get these two "camps" together are needed if much of the present Canadian research in early childhood education is to find its way into the educational community.

Dissemination Beyond the Research and Teacher Education Community. The Canadian Association for Young Children is a nationwide organization comprised of teachers in both school systems and the day-care/nursery/infant-care fields, and of university personnel and researchers interested in young children. This group functions primarily through national conferences for teachers and other professionals, publication of the journal of the association (which undertakes to translate implications of early childhood research) and a bulletin. It is the intent of the organization to function more actively at a provincial or regional level. If SSHRC is interested in improving the dissemination and application of educational research, the Canadian Association for Young Children would be an appropriate vehicle through which to organize such an effort relating to early childhood education.

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Chapter 7

EDUCATIONAL ADMINISTRATION

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Administration is an established area of professional practice in schools and school systems. In the past few decades educational administration has also emerged as an area of professional preparation and of scholarly activity. The purpose of this paper is to provide an overview of the latter facet, namely, research in the field. In particular, the first two sections of the paper focus on describing the area of inquiry through both definitions and examples. Attention then shifts to the resources available for conducting research and to the challenges confronting scholars in Canada. The paper concludes with suggestions concerning initiatives which might help scholars to meet these challenges.

SCOPE AND SUBSTANCE

Research in educational administration encompasses all forms of systematic inquiry which seeks to inform the practice of administration in an educational context. As is true for other professional or applied fields, the substance and scope of research problems is determined in large measure by the kinds of activities in which administrators engage, the functions which they perform and the problems which they encounter in carrying out their roles. In general, the research area focuses on both the internal operations of organizations and their environments.

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Administrative Tasks and Processes

The scope of research in educational administration may be described in terms of task areas and functions which define the range of activities in which administrators commonly engage. The substance of specific studies may focus on one or more of the following:

-designing, organizing and evaluating educational programmes;
-selecting, supervising and developing staff personnel;
-organizing students and providing various auxilliary services;
-designing and maintaining physical facilities and support services;
-procuring and distributing financial and other resources;
-managing the organization in accordance with legal requirements;
-maintaining linkages between a specific unit and other organizations as well as the community in general.

This list does not exhaust the area in which research is carried out; however, the topics may be regarded as central to studies which have an applied orientation.

Another way in which research in educational administration could be defined and classified is in terms of various administrative processes and organizational variables. For example, research problems may focus on the behaviour of individuals and groups within organizations, on the processes through which decisions are made at various levels, on evaluation and change, on goal definition, on leadership and supervision, or on the resolution of conflict. Environmental factors which have implications for educational policies and practices -- such as societal and cultural changes -- may also be the focus of research. Specific research projects in each of these areas would emphasize those aspects which are particularly relevant to the development of educational administration as a field of study and practice.

Research Interests

The area may also be defined on the basis of the interests of academics in educational administration. According to the Canadian Society for the Study of Education (CSSE) register of research interests (Maguire, Montgomerie, and

Holdaway, 1978) Canadian scholars identified research interests as follows: futurology, governance and politics of education, organizational theory, personnel supervision, planning and needs assessment, administrative behaviour, evaluation, economics of education, programme development, legal aspects of education, research in teaching and supervision, continuing/adult education, comparative educational administration, policy studies, computer/individualized instruction, computer applications, collective bargaining, administration of intercultural education, epistemology and phenomenology. The last few areas are relatively recent additions to the list of research interests expressed by those in the field.

Characteristics of Research

Research in educational administration has a number of distinctive characteristics which are evident to varying degrees in the design of specific studies. These reflect both the nature of the field and the emerging research traditions.

1. Educational administration is a relatively new subfield within the general field of education. As an area of scholarly activity, it is closely related to the development of university-based preparation programmes for adminstrators which has taken place in the United States and Canada during the last thirty years. Consequently, much of the research to date has been of an exploratory nature in the sense that various concepts and methodologies have been tested. In some respects, the general terrain in which future research activity might take place has been mapped; however, there are few specific areas in which there is a series of well-developed studies.

2. The field of educational research is highly diverse and varied. This is a consequence, in part, of the variety of educational organizations, the differences in the circumstances under which these organizations operate, and the changing nature of the environment of education. Different researchers have been attracted by different problems, and the results of their work reflect this diversity. Consequently, the field is fragmented into a variety of subspecializations; researchers in one specialization may have little in common with those in another with respect to either conceptual frameworks or methodologies.

3. The distinction between a research problem in educational administration and problems in other subfields of education is not always distinct (Baron, 1979-80). For example, research on change and innovation in a particular curriculum area could be viewed as curriculum research; however, if the emphasis were on the process of change and its consequences, it could be classed as a research problem in administration.

4. With respect to administrative and organizational processes and variables, research in educational administration relates very closely to research in other administrative disciplines such as business, public and hospital administration. Consequently, the search for related literature on a particular problem may take the researcher into these other fields, and the results may have application beyond an educational setting.

5. The conceptual base for studies in educational adminstration draws heavily on the social science disciplines and, to a somewhat lesser extent, on the humanities. This dependence is clearly evident in those specializations within educational administration which are closely related to social science disciplines such as the economics of education, the politics of education, the sociology of organizations, the social psychology of groups in organizations and the cultural environment of education. The relevance of the basic disciplines is evident in the substance of courses and in the design of research projects.

6. The methodologies of research in educational administration reflect the variety of approaches in the social sciences and humanities. Research in educational administration has no distinctive methodology and covers the full range from case studies, participant observation, questionnaire surveys, computer simulations and other forms of both quantitative and qualitative inquiry.

7. In educational administration the distinction between basic and applied research is at least as blurred as in the field of education generally. To the extent that most of the research is likely to have relevance for the practice of administration, all research has an applied component in the sense that it is of social or practical relevance. However, the design of most studies probably also incorporates a conceptual element which provides for a general contribution to knowledge in the field. The definition of what is basic, therefore, must be modified for this particular field as well as for

other professional fields.

Significance of Research

Research conducted in the field seeks to inform practice in a number of ways. First, research has contributed to the development of a body of knowledge which forms the substance of preparation programmes for educational administrators. Scholarly activity develops the basic analytical perspectives which provide administrators with the conceptual, human relations, and technical knowledge and skills required to carry out their functions. Second, research in the tasks and process areas may assist with the evaluation of specific practices or with testing alternatives which may be under consideration. Third, the research may acually lead to policy alternatives which had not been considered.

To date, research activity appears to have been most successful in serving the first two objectives. The support for this conclusion comes mainly from practicing administrators who generally assess positively the contribution which their studies have made to the knowledge of administrative roles and organizational processes. An indicator of the achievement of the third purpose may be the extent to which school authorities seek assistance from researchers with policy planning decisions; this has increased in recent years. Examples of the types of studies which are conducted provide further indication of the significance of research in this area.

NATURE OF RESEARCH

Research projects in educational administration can be differentiated on the basis of who carries them out and for what purpose. The major categories of research conducted are as follows: projects completed by students as part of degree requirements; projects initiated by individual researchers or groups of researchers; projects contracted by agencies for the purpose of investigating specific topics; and projects undertaken by such agencies themselves without the involvement of outside researchers. Thesis research and research projects

initiated either by researchers or contracting agencies encompass most research activity; consequently, attention to these areas will serve to describe much of the research which is conducted.

Thesis Research

A survey conducted by Holdaway (1980) of thesis research in eleven Canadian universities between 1973 and 1977 revealed that about 270 theses were completed in that period. Of this number 110 could be classified as focusing on administrative processes and organizational variables while 106 were related to tasks of administration. Most frequently identified within administrative processes were group behaviour, organizational structures and decision making. In the task areas about one-third related to curriculum and instruction, followed by community relations, student personnel and staff personnel, in that order. The most common method of data collection was a questionnaire (152 studies), followed by the case method (62 studies) and interviews (34 studies).

The diversity in research which has been alluded to previously also exists with respect to thesis research. Studies cover the full range from theoretical, hypothesis-testing and basic research to those which have a more applied orientation and which focus on current problems and issues; consequently, no single study can be viewed as representative. The thesis which has been selected as an example (March 1981) does have some of the more frequently encountered characteristics: the problem could be defined in applied terms but is also grounded in an established area of theorizing in the social sciences; the researcher designed a questionnaire for collecting data; the source of data was practising administrators; analysis was primarily descriptive in nature; and finally, the outcomes have implications for practice, theory development and further empirical research.

The purposes of the study, which is entitled Variations in Degree of Control over Educational Decisions, were as follows: (1) to assess the current patterns of control over educational decisions; (2) to describe and analyze changes in pattern of control from 1975 to 1985; and (3) to examine selected factors which might have an influence on changes in patterns of control. Data

were obtained from school superintendents in the four western provinces on the degree of control exercised at each of five organizational levels: the department of education, the school board, the superintendent's office, the principal and the teachers.

The questionnaire designed by the researcher contained thirty-two decision items. For each item, respondents indicated their degree of control at each organizational level in 1975 and 1980, and what may be expected in 1985. Respondents also rated the centralizing or decentralizing influence of factors such as general economic climate, school board policy and pressure from various sources. Of the 278 questionnaires distributed initially, 172 replies were included in the final analysis.

Among the results reported by the researcher was the conclusion that the degree of control at each organizational level varied from issue to issue. Main control for most items seemed to be distributed among the board, the principal and the superintendent. Although there were some differences across provinces and school districts, similar patterns of control prevailed.

With respect to changes that had already occurred and those that were expected to occur over the ten-year period, the pattern which emerged was one of gradual increase of control at the school level without any major shift in the authority to make decisions. Many of the changes which were reported were small and did not affect the balance of control. The researcher reported that increased control at one level was not always associated with decreased control at another level; the number of reported increases in degree of control greatly exceeded the number of reported decreases.

Most of the centralizing influences were perceived by the respondents to be external to the educational organization, such as the political and economic climate, while some internal factors were perceived to exert a decentralizing influence. Over the time period considered, the centralizing forces appeared to be stronger than those which had a decentralizing influence.

Further research was recommended to increase the scope of data sources, to broaden the range of decisions, to include other decision makers, to compare trends over a broader region and to examine the effects of changes. Suggestions were also made concerning other methodologies which might be used to examine the process through which changes in the locus of decision making are actually effected.

Staff Research

During the period 1973 - 1977 when 270 graduate theses were completed in educational administration, department chairpersons in twelve universities reported that 210 staff research projects had been completed (Holdaway, 1980). When these were classified under the same categories as the student research, nearly one-half (98) appeared under the tasks of administration and about one-quarter (55) related to administrative processes and organizational variables. In the tasks area the two most frequently researched topics were staff personnel and curriculum/instruction; in the processes area, decision making appeared most often as a research topic. A total of twenty-two studies were conducted on societal factors influencing education such as governmental relations, population change and values. The methodologies of these studies seemed to be more varied than that of thesis research; however, in approximately one-half of the studies, questionnaires were used either alone or in combination with other methods.

The expertise of professors is in demand for conducting studies in various substantive areas which are relevant to decision makers at the provincial and local level. At times such research is expected to contribute to the solution of an immediate problem, while at other times it may relate to a longer-term policy consideration. The project selected as an example was conducted by a team of researchers at the University of Alberta as a contracted project funded by the Alberta Department of Education. The summary which follows is based on the final report (Ratsoy et al., 1981).

The research project focused on the first stage of a more comprehensive study of educational finance in Alberta. In general, the intent of the study was to summarize basic descriptive information, to identify recent trends and to develop projections or implications for the future in the following areas: revenues and expenditures at the school jurisdiction level; selected grants; curriculum programming; and the characteristics of teachers, teaching situations and student enrolments. Implicit in the design of the study was the intent to search for variations, not only over time in the decade of the 1970's but also across different types of jurisdictions, schools and grade levels as was appropriate for each major area of the study.

Main data sources were published reports and various data files of the Department of Education; no new data were collected, primarily because of the

time frame for completing the study. Methods of analysis ranged from basic descriptive statistics to various approaches for analyzing trends and relationships.

With respect to revenues and expenditures, the results confirmed the presence of variations over time in sources of revenues and categories of expenditures. There were also variations in patterns of revenues and expenditures across different types of jurisdictions. An analysis of eight fiscal equalization grants suggested that, with some exceptions, the actual equalizing effect was minimal. The assessment of trends in curriculum and programming indicated that there had been a more substantial change in patterns of enrolment and course offerings in grades ten to twelve than in other grade levels. The analysis of staff and teaching situations confirmed that the provincial education system could not be considered homogeneous with respect to these features.

Among the major projections indicated were the following: a shift in the burden of financing schooling to the property tax; an increase in the number of special grants accompanied by a decrease in the proportion of general allocations; and a more diversified pattern of financing. The most likely scenario developed for school programmes suggested an ascendancy of centralizing forces in curriculum development. Projections with respect to staff and teaching situations indicated increasing variety in positions and roles, more favourable teaching situations, relatively little change in staff characteristics, and a decline in the proportion of total provincial enrolment in the large urban jurisdictions.

Although further macro-studies were supported in the report, the researchers came out strongly in support of micro-analysis which would contribute to a better understanding of the impact of funding arrangements on school programmes and practices. In particular, they suggested that "Qualitative analysis using case study methodology in a small number of jurisdictions and schools would yield important data not presently available in existing files and reports" (pp. 236-237).

RESOURCES FOR RESEARCH

The Canadian Education Association's Directory of Education Studies in Canada, 1979-80 reports approximately one hundred studies on topics which appear

to be of an administrative nature. Of these about three-quarters were completed in universities either as theses or as staff-initiated research projects. The remaining one-quarter were completed under the sponsorship of agencies such as provincial departments of education, boards of education and teachers' or trustees' associations. Those sponsored by departments of education far outnumbered the others; these studies were completed either by research staff or through contracts.

Personnel Resources

The data presented above tend to confirm the general impression that the personnel resources for conducting research in educational administration are located primarily in universities. This same source confirms another characteristic of research activity which has been mentioned by others, namely, that graduate students make a substantial contribution to research activity.

At least thirty Canadian universities now offer graduate programmes, and about one-third of these have doctoral programmes (Miklos and Nixon, 1978). The research capability is dispersed across the country, and each region has at least one university with the staff and students for conducting basic and applied research. The characteristics of some departments may, however, militate against research activity: heavy teaching loads, a high proportion of part-time students, and heavy demands on professorial time and energies for involvement in various field activities.

In 1977-78 more than 330 students were enrolled full-time in masters programmes while about 175 were enrolled either full-time or part-time in doctoral programmes (Miklos and Nixon, 1978). In the same year nearly 3,000 students were enrolled in either pre-masters or masters programmes on a part-time basis. The number of professors who would identify educational administration as a major field of specialization is difficult to estimate but might number approximately one hundred. Although some students and professors are not likely to be involved in research to an appreciable extent, the personnel resources are still significant.

Financial Support

The support for graduate student research is much more likely to take the form of fellowships or scholarships than the form of direct funding of a specific research porject, although there may be provisions for this in terms of the fellowship. The sources of financial support for twenty doctoral students who completed their programmes in 1976 were as follows: non-university fellowships/scholarships, 6; academic employment including research and teaching assistantships, 5; spouse's income, 2; university fellowships, 1; and other sources, 6 (Statistics Canada, 1979). During 1979-80 SSHRC received forty-two requests for doctoral fellowships; thirteen were awarded for a total value of $90,319. The success rate of applicants compared favourably with candicates in administrative studies generally (SSHRC, 1979-80).

The source of funding for staff research was identified for about 200 staff projects completed between 1973 and 1977 in twelve Canadian universities (Holdaway, 1980). These sources were as follows: university, 41% ; government ministry, 30%; school district, 10%; Canada Council, 3%; other, 13%; more than one source, 3%. In 56% of these studies, the scholar was the source of the proposal, while in 36% the contracting agency initiated the study; the remaining proposals were developed jointly. These data confirm the heavy reliance on universtiy budgets and ministry funds for conducting research in educational administration. The probability that ministry and school district funded projects are in support of contracted research is suggested by the approximately equal funding from these sources (40%) and the percentage of studies in which the proposal originated with the contracting agency (36%).

In addition to direct funding of research projects, university staff might be released from other duties to give them more research time; or they might be given leave. Data on the extent of this form of support are not readily available. However, in 1979-80 SSHRC received four requests for leave fellowships of which two were awarded. During the same year one scholar was awarded a travel grant to participate in an international conference.

CHALLENGES

Scholars in the field are confronted by a number of challenges. The extent to which and the way in which these challenges are met will have a significant impact on future research activities. Among the more pressing issues are those related to developing Canadian research, resolving fundamental conceptual problems, achieving an appropriate balance between basic and applied research, increasing the proportion of professorial research, and disseminating the results of research. Each of these merits some further elaboration.

Developing Canadian Research

Most of the literature in the field -- particularly that relating to research and theory development -- has emanated from the United States. Although much of this literature is of general conceptual relevance, there is also a need to focus attention on the special circumstances of particular educational systems. In other words, the knowledge base for educational administration consists of two major components: (1) that which is to some degree common to educational systems in approximately similar contexts, and (2) that which is unique to a specific context. Canadian scholars have a responsibility to develop those areas of theory and research which are particularly relevant to the administration of education in Canada. In some respects, they also owe an intellectual debt to scholars in other countries and should attempt to increase their contributions to the general development of the field of study.

In a presentation to the 1978 International Intervisitation Program, which was held in Canada, Farquhar (1980: p. 9) outlined a number of issues which confront educational administrators in all provinces. He made specific reference to the following, among others: politicization of education, declining enrolments and financial retrenchment, teacher supply, pressures for native self-determination, and the decline in the public preception of the value of education. Farquhar (1980: p. 12) also commented on the "amateurism of educational administration" in Canada, meaning that the practice has not been widely accepted as a distinct profession which requires specialized

training and which draws upon a unique body of knowledge. Clearly, scholars are challenged to demonstrate through their work that such a body of knowledge does exist, in part, and that it can be developed further.

Clarifying Conceptual Bases

There is increasing concern in the field about the adequacy and the appropriateness of the approaches to research in educational administration that have been dominant over the past three decades. A 1977 seminar sponsored by the Universities Council for Educational Administration on problem-finding (Immegart and Boyd, 1979) generated considerable discussion on the nature of alternative research paradigms and basic conceptualizations. Griffiths (1979), for example, rejected the perspective which views organizations as goal dominated, administrative behaviour as rational, and member motivation as ordered around bureaucratic and legitimate power. In his view the research strategies which have been in vogue are no longer useful to administrators because they do not lead to generating useful concepts or to describing organizations. Instead, he suggests that there is a need to develop a new paradigm which encompasses different concepts, alternative forms of theorizing and more complex methodologies (1979: p. 58).

The logical-positivist orientation of the research has also come under severe criticism, and the limitations of the deductive, quantitative, systems-oriented emphasis have been debated. A number or writers, notably Greenfield (1979/80) and Hodgkinson (1978), have criticized the research traditions in the field on the grounds that such approaches ignore the philosophical and value questions which are central to the practice of administration. After an initial defensive reaction from some scholars, there seems to be increasing support for inductive research strategies, and the contributions which phenomenologically based qualitative studies could make to developing basic understandings are now more widely recognized.

In summary, there would seem to be consensus that the knowledge base for educational administration is far from adequate; however, the major approaches through which this knowledge base can best be developed is still a matter for intense debate, and consequently it forms an important area for further

scholarly attention.

Balancing Basic and Applied Research

In the views of some commentators, such as Hoy (1978), there has been too much emphasis on applied research in the field; other critics have commented on the shallow knowledge base of educational administration. In his penetrating review, Immegart (1977) concluded that research in the previous two decades had increased in both quality and quantity but not so dramatically as many think. He noted that "research [tended] to follow 'hot' topics, social concerns, popular concepts or practical presses of the time" in the absence of "central concepts, theory or models to guide investigative efforts" (1977: p. 316). Implicit in this comment is the observation that there has been an inappropriate balance between applied and basic research.

While some critics favour more basic research, others such as Erickson (1977) have advocated focusing the field on studies which would explore causal relationships between organizational variables and outcomes of schooling. A similar focus is proposed by Silver (1980-81) when she suggests that the field should focus attention on "practical rather than academic matters; problems associated with maximizing student achievement; and the effects of administrative actions."

The orientation proposed by Erickson and Silver would seem to be compatible with an increasing emphasis on policy research and policy analysis which is supported by Boyd and Immegart (1979) and by Wirt (1979). Indeed, Wirt recommends policy analysis "as the major thrust for educational administration research and training in the next decade" (1979: p. 148). The climate for such research seems right, according to Culbertson (1980), given the many ambiguous and unanswered questions facing policy makers. However, Culbertson cautions that research in the field seems to be in flux because there are differing concepts about the nature of policy studies, about what technologies are appropriate and about who should carry out such studies (1980: p. 334). Consequently, the challenge which confronts scholars is not only to balance basic and applied or policy research but also to define what the appropriate character of such research should be for this field of study.

Increasing Professorial Research

The criticisms by recent reviewers of the research activities of professors have been both penetrating and pessimistic. Professors in some universities are characterized by Boyan (1980) as being practice-oriented, heavily involved in teaching and supervising graduate research, and dependent on a small group of scholars. He says there are only a few researchers who contribute regularly to the body of literature and that there is a lack of a "critical mass" of scholars in any particular area of specialization. Jennings (1979/80) also makes reference to the lack of a tradition of departmental research and expresses the view that the prospects for a stronger research orientation are not good.

Whether professors deserve such sharp criticism is probably debatable; however, there is ample evidence that the development of the knowledge base in this particular field has relied heavily upon research completed by graduate students for degree requirements. Many have also been extensively involved in staff research projects. Although graduate student research has made a substantial contribution to the field, there are circumstances which severely limit the impact of such research. In the minds of many critics, there is an urgent need for more professors to orient themselves to research, and in particular to basic research.

The challenge which confronts professors is for some to change the emphasis in their activities in order to give increased attention to the development of the field of study. Whether sufficient numbers have the interest to do this and whether circumstances will permit such reorientation is, of course, problematic. However, an optimistic outlook would suggest that the scholars themselves will not ignore the critiques and will respond to the challenge.

Disseminating Research Results

Given the nature of the research conducted in the field and the characteristics of those doing the research, it is not surprising to find that there is a dissemination problem. Immegart reported an "acute problem

in the availability of research in the field of educational administration" (1977: 320-321). The problem, as he saw it, covered the full range of dissemination and utilization, from recording and publishing to listing. In Canada, Holdaway (1980) also identified poor communication among researchers as one of the problems associated with research in this field.

The bases of the problem are not difficult to uncover. Much thesis research is not published because the majority of graduates pursue administrative, rather than academic, careers for which publishing is not relevant. Contracted research projects normally have restrictions on publication, and the reports may require additional pre-publication work which goes beyond the terms of the contract. The situation would seem to call for more academics to become involved in synthesizing and consolidating the results of studies to increase the probability of continuity in the development of various lines of research. Some stimulation and support may be required in order to arouse interest in this important activity.

DIRECTIONS

The challenges which have been discussed merit the attention of individual scholars, of the departments and universities in which such scholars work, and of all others who have some stake in the further development of this particular field of study and of education more generally. Indeed, each one of these individuals and groups has some contribution to make to meeting these challenges; however, in the suggestions which follow, particular emphasis is given to the role which might be played by funding agencies.

1. If there are to be significant developments in the field of study, then more emphasis needs to be given to the research role of the professor of educational administration. The stimulation and support which might increase the research productivity of professors could take a number of forms including the following: (a) continuing the provision of leave fellowships and research-time stipends, which enable professors to concentrate on scholarly work over an extended period of time; (b) encouraging development of research proposals by scholars who wish to re-orient their activities and by junior

academics who wish to develop a research orientation in their work; and (c) funding of basic research projects at a level comparable to that available for contracted applied or policy research.

2. Even with increasing attention to professorial research, the support of graduate students and their research will remain important for the development of the field. Fellowships for as long as three years of study would enable students to undertake more significant research. Funding of research projects for those who do not hold fellowships would also enable students to consider research designs different from those usually dictated by financial constraints.
3. Research which seeks to collate, to critique and to synthesize existing studies needs to be supported. Support for this type of scholarly activity would help to overcome some of the problems of discontinuity and redundancy which now exist. Dissemination of such research would also improve communication among scholars in the field. Related to this focus would be the funding of research with more of a philosophical orientation than the empirical studies which have achieved the status of a tradition. Given the current debate over the appropriateness of fundamental perspectives, such research is highly significant.
4. Although provincial governments are quite active in funding policy research, there is likely to be less interest in more basic considerations such as the process of policy formulation and implementation. This is an area which might well require funding from other sources. Similarly, the comparative study of policy issues across a number of provincial systems is highly unlikely to attract provincial funding, particularly if the issues relate closely to federal social and economic policies such as those relating to equality of opportunity, mobility and minority rights, since these impinge upon the administration of education.
5. The limited extent to which some professors have been involved in basic research may call for the application of broadened criteria in the assessment of research competence. In addition to the general criteria associated with the record of basic research conducted, attention might be given to such experience as supervision of graduate research,

preparation of applied research reports and scholarly writing generally. The application of such criteria might encourage senior academics who feel that they have not developed the background needed to compete successfully for funding to enter such competitions.

CONCLUSION

Following closely behind the United States, Canadian universities have developed academically rigorous, research-based preparation programmes for educational administrators. The theory-based nature of these programmes has not only served Canadian administrators but has also attracted students from various Anglophone and developing countries. Although the initial development of these programmes was confronted by unique challenges, which were effectively met, new ones have emerged, which must also be met if the preparation of administrators is to continue to be adequate to meet the demands placed on the educational system.

The period when educational administration could borrow heavily from other administrative studies and the social sciences seems to have passed. Similarly, the extent of borrowing from other countries such as the United States has also reached a level which perhaps should not be exceeded. Instead, there is now a need to develop and extend Canadian scholarly activities on which future preparation programmes can be built and which will contribute to the solution of problems confronting educational systems. The manner in which the goal of increased research activity can be accomplished constitutes a challenge not only to specialists in the field but to all who have an interest in the future of education.

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Chapter 8

EDUCATIONAL FOUNDATIONS

R.L. Schnell*

The traditional areas subsumed under Educational Foundations include specialties with connections to mainstream departments in the humanities and social sciences. Anthropology, history, philosophy and sociology of education have either drawn upon the theoretical and applied work in the related disciplines or have been integrated into their work. Changes in academic styles and interests are reflected in the educational specialties. Comparative education offers a more diffused picture since the approaches to the field have reflected the backgrounds of scholars and not an overall disciplinary point of view. Comparativists have approached their work from the disciplines of history, sociology, political science, anthropology and economics, as well as from more recent fields such as development studies.

When one considers that in North America, many of the first university departments of education included educational psychology among the foundation disciplines, it is appropriate to understand educational foundations as the extension of the traditional disciplines of the arts faculty into the study of education. Unlike the more limited examples of similar developments in other professional faculties, discipline-based investigation, analysis, syntheses, interpretation of and experimentation with educational phenomena represents a central concern for educational staff. Although much of the research in educational foundations is similar to work done in related arts departments, there are significant differences in focus, with the overriding concentration of researchers in educational foundations on education and schooling.

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The newness of Canadian educational research has simply compounded an endemic national problem, that is, the importation of, and reliance on, research findings and instruments. A brief examination of recent and typical studies from several of the specialties will illustrate the problem. It is not our contention that prototype studies done elsewhere should not be replicated here but that the generation of Canadian data and the modification of imported research designs and instruments need to be encouraged.

FOUNDATIONAL FIELDS

Comparative Education

Because studies in comparative education are not likely to be seen as relevant to local or provincial questions, there is not likely to be much funding support at that level. On the other hand, as comparativists in Canada tend to use international data to address immediately or ultimately local educational problems, their work does not neatly fall into any governmental category. There is clearly a need for federal support for major collaborative comparative projects, and for routine collection, processing, and dissemination of data.

Most Canadian research falls into the category of area studies and is usually thematic and/or contextual with the intention of relating indirectly to policy resolution in Canada. See, for example, J.C. Jacob, "The Role of the School in Latin American Rural to Urban Migration," Canadian and International Education, Vol. 5, No. 1; Joseph Malikail, "State Policies on Moral and Religious Education in India, 1858-1967," Canadian and International Education, Vol. 5, No. 2; David N. Wilson, "Universal Primary Education in Nigeria: An Appraisal of Plan Implementation," Canadian and International Education, Vol. 7, No. 2; R.F. Lawson, "Democratic Progress in West German Education," Canadian and International Education, Vol. 6, No. 1; E. Schiefelbein and J.P. Farrell, "Social and Pedagogical Factors Influencing Survival in the Schools of Chile," Canadian and International Education, Vol. 7, No. 1.

Although a fair amount of work in comparative-quantitative studies has been done in Europe and the United States, little has been done by

Canadian scholars. See, for example, A. Farine, "Le Secteur de l'enseignement au Canada," Canadian and International Education, Vol. 5, No. 1; Lorenzo Morris, "The Politics of Education and Language in Quebec: A Comparative Perspective," Canadian and International Education, Vol. 5, No. 2.

Development studies, which have attracted the interest of a much larger number of Canadian scholars, appear in various journals. It also overlaps the other categories mentioned here. See, for example, M. Zachariah, "On Comparative Educators and Development Policy," Comparative Education Review, Vol. 23, No. 3; M.K. Bacchus, "Education for Development in Underdeveloped Countries," Comparative Education, Vol. 17, No. 2; A.R. McKinnon, "Canadian Programs in Third World Education Development," Canadian and International Education, Vol. 4, No. 2.

There is, finally, what might be called Canadian application, that is, the application of international data to Canadian society or to a specific problem. See, for example, Ann Denis, "Nationalism and Multiculturalism in Quebec," Canadian and International Education, Vol. 6, No. 1; Jorgen Dahlie, "Learning on the Frontiers: Scandinavian Immigrants and Education in Western Canada," Canadian and International Education, Vol. 1, No. 2; Margaret Gillett, "The Majority Minority: Women in Canadian Universities," Canadian and International Education, Vol. 7, No. 1.

Some macro-problem areas for research include: (a) curriculum policy, (b) school achievement, (c) multicultural and minorities, (d) the use of educational technology, (e) ideological clarification regarding educational policy, and (f) political socialization or Canadian identity. These general topics reflect both the concerns of active researchers and the four categories of studies discussed above.

History of Education

Within Canadian educational circles, history of education is perceived to be a descriptive, narrative and non-empirical study with little relevance to contemporary interests or problems. (See Philip H. Winne and Jack Martin, "Research Productivity in Canadian Faculties of Education," CSSE News, 1981, for a selection of journals that totally ignores historical scholarship.) This perception represents a serious misunderstanding of current scholarship

in history of education. While obviously non-experimental, its reliance on archival and documentary sources makes history profoundly empirical. Recent historical studies in education have been marked by analysis and interpretation; indeed, some of the most exciting scholarship of the past decade came from educational historians.

With all that, however, there remain major problems similar to those evident in comparative education, that is, the scattered nature of the work, the undue reliance on imported perspectives and the excessive emphasis on fragmented national and regional experiences.

As an academic specialty, the history of education has had a very short life in Canada. The first comprehensive text did not appear until 1957 (C.E. Phillips, The Development of Education in Canada [Toronto: W. J. Gage]), and the only attempt (J. Donald Wilson, et al., Canadian Education: A History [Scarborough: Prentice-Hall, 1970]) to provide a text incorporating the major developments in historical style and interest is now out of print. There have been several attempts to bring together scholars working in related areas by means of conferences: Ryerson and His Times (Toronto, 1976), Relationship of Educational History and Historical Specialties (Calgary, 1980), and the New Education in Canada, 1880's - 1920's (Toronto, 1982). The papers presented at the first two conferences were subsequently published as Neil McDonald and Alf Charton (eds.), Egerton Ryerson and His Times (Toronto:Macmillan of Canada, 1978) and R.M. Stamp et al. (eds.), Relationships - Education and History (Winnipeg: Faculty of Education, University of Manitoba, 1981).

One can parallel these conference proceedings with similar efforts at bringing together collections of essays on either regional or provincial basis. See, for example, the special issues of the History of Education Quarterly 12 (Fall 1972) on 19th Century Ontario and the Journal of Educational Thought 14 (August 1980) on Western Canada. In "Historiographical Perspectives on Canadian Educational History" (Journal of Educational Thought 11 [April 1977], J. Donald Wilson categorized recent scholarship as moderate or radical revisionism -- with, I might add, a strong tinge of whiggery.

The period between the publication of Canadian Education: A History (1970) and the Calgary Conference (1980) represented both the promise and the problems of the history of education in Canada. In general, the "new" history of education has shaken off the most obvious characteristics of the old

educational history that separated educationists from scholars in the arts faculty. On the other hand, we are still waiting for the major monographic studies that will give us an interpretative grasp of the educational experience in British North America and Canada.

Finally, with the exception of the Calgary conference, historians of education who were not studying Canadian education were effectively excluded. The exclusion, not consciously intended, has resulted from the determined focus on the Canadian experience. A more generous concept of history of education would be beneficial both to those in Canadian studies and to those working in other areas.

Major studies produced by historians of education in Canada include, Neil Sutherland, Children in English-Canadian Society (Toronto: University of Toronto Press, 1976); Michael B. Katz, The People of Hamilton, Canada West (Cambridge: Harvard University Press, 1975), especially chapter 5; Paul H. Mattingly and Michael B. Katz (eds.), Education and Social Change (New York: New York University Press, 1975); and Alison L. Prentice, The School Promoters (Toronto: McClelland and Stewart, 1977).

Significant macro-problem areas for research, at least in the Canadian experience, include (a) twentieth century Canadian education -- with emphasis on the inter-war years, and (b) relationships between child, family and schooling. (The new SSHRC strategic grants for The Family and Socialization of Children promise a needed impetus to research.)

Philosophy of Education

Unlike its parent discipline , philosophy of education did not undergo a revolution in the post-war years. Although most philosophers of education now have extensive training in philosophy and some are professors of philosophy who have been attracted to educational problems, analytic philosophy, which was at the heart of the revolution in philosophy, has been assimilated, together with older forms of philosophizing, into philosophy of education. There continues to be profound disagreement concerning the appropriate mode of philosophy for introductory courses, and philosophers of education continue to approach their work historically, phenomenologically, and so on, as well

as analytically.

Articles by philosophers of education appear regularly in most Canadian education journals. Some journals have sponsored special issues dealing with philosophy of education, for example, the Nova Scotia Journal of Education 7 (March 1981) and the Journal of Educational Thought 15 (April 1981). The concern of philosophers with argumentation, logical clarity, and conceptual analysis often seems to non-philosophers to be labourious and pedantic. Moreover, the interest in individual concepts and specific problems tends to give the impression that philosophical inquiry is disconnected, overly technical or specialized, and unrelated to both significant practical and theoretical matters. The results of such perceptions are evident in the articles on teaching and learning, for example, in which philosophical analyses are rarely mentioned.

Certain problems which continue to absorb the interest and energy of philosophers of education include the relationship between philosophy of education and educational theory, i.e., relating philosophical research to education in ways that bring about desirable changes; and the question of relevance of such research to education, especially undergraduate programmes (see Sister Mary Olga McKenna, "The Status of Philosophy of Education," Canadian Journal of Education 6 [1981]).

The resolution of such difficulties seems more likely if there is more cooperative activity. The most active Canadian unit is the University of British Columbia which has a large number of philosophers of education, who are often engaged in collaborative research and writing. In brief there needs to be some greater cooperative work among the present philosophers.

Sociology of Education

In general, it might be said that sociology of education suffers from the same problems plaguing Canadian sociology generally. These endemic problems are (1) that there is no distinction between American and English-Canadian sociology and (2) that few distinctly Canadian problems have been adequately studied. See Nathan Keyfitz, "Sociology and Canadian Society," in T.N. Guinsberg and C.L. Rueber (eds.), Perspectives on the Social Sciences in Canada

(Toronto: University of Toronto Press, 1973) and Lorne Tepperman, "Sociology in English-Speaking Canada," Canadian Historical Review 59 (December 1978).

Canadian sociologists of education have demonstrated an interest in the nature of their field that rivals that of Canadian historians of education. B.Y. Card has produced two statements: "The State of Sociology of Education in Anglophone Canada," CSSE Bulletin 2 (1974), and "A State of Sociology of Education in Canada - A Further Look," Canadian Journal of Education 1 (1976); Anne Marie Decore, "Sociology of Education in Canada," Journal of Educational Thought 11 (December 1977) examined some of the problems of identity; and Wilfred B.W. Martin, "Neglected Aspects in the Sociology of Education in Canada," Canadian Journal of Education 3 (1978), has pointed out possible research directions.

Although most of the research continues in the traditional empirical/experimental form (Richard A. Carlton, et al., Education, Change and Society [Toronto: Gage, 1977]), one can also find work such as W.B.W. Martin, The Negotiated Order of the School (Toronto: Macmillan, 1976), which illustrate the symbolic interactionist approach. Interest in ethnomethodology and phenomenological sociology can be found in the work of James Heap (OISE) and Richard Heyman (Calgary).

Comparatively speaking, sociological studies generally require substantial funding, that is, $100,000 upwards. Such costs suggest, at least to this reviewer, that research consortia are appropriate ways of involving large numbers of researchers across the county. In most institutions, there are rarely more than two staff members who devote their full time to sociology of education.

Some macro-problem areas for research include: (a) interactional studies of classroom (for example, language use), (b) qualitative studies of testing, (c) curriculum formation and policy relating to curriculum, (d) multi-cultural perspectives and minorities, (e) Canadian identity -- difficulty in promoting identification with the nation-state, and (f) correlates of Canadian social development.

RESEARCH SUPPORT SYSTEMS WITHIN FACULTIES OF EDUCATION

Most research in educational foundations is done by single researchers.

(As indicated above, there does appear to be some need for collaborative research in some specialties, for example, comparative education and philosophy of education). The demands of academic life, that is, teaching, participation in practica, and service, do not seem to be related significantly to either the amount or quality of research undertaken.

With few exceptions, no great concern regarding sources of funding was expressed. The SSHRC and university research grants were generally considered adequate for most needs. Certain specialties, for example, history of education, seemed to require new, flexible means of disseminating information about work being done. One suggestion was to establish newsletters.

RECOMMENDATIONS: SUBSTANTIVE ISSUES

1. Greater emphasis on the implications of fundamental research for contemporary policy formation.

   Although scholars in history and philosophy expressed particular concern over the perceptions of their disciplines, most foundationists thought that the relevance of their studies to informed policy formation is not recognized.

   SSHRC could contribute to the more effective use of research by sponsoring workshops and seminars designed to link research and related policy issues.

2. Increased support for fundamental research into the Canadian experience.

   The general tendency to rely on research and development conducted elsewhere represents a major weakness in education research. The simple replication of foreign studies should be avoided and greater emphases placed on the design of new research instruments and interpretative frameworks for use in Canada.

RECOMMENDATIONS: SUPPORT FOR EDUCATION RESEARCH

1. Post doctorals: Generally speaking post-doctorals do not exist for recent graduates in educational foundations. Any research involving substantial field work is handicapped by the small size of most graduate programmes. Post-doctorals would contribute to the research development of existing programmes and would assist recent graduates in furthering their research capabilities.

2. Since much of the research is still to be found in doctoral dissertations, a more generous programme of fellowships, post-doctorals, and publication grants is needed to transform dissertations into scholarly books.

3. The development of new specialties within educational foundations, for example, policy studies and policy analysis, suggests the need for programmes that allow existing staff to be re-directed, for completed research to be re-examined for policy implications, and for unemployed graduates to be used in collaborative research.

4. More effective means of disseminating information arising from research by means of an adequately supported specialty newsletter and the establishment of networks of researchers by means of categories of experts would contribute to the more effective use of research personnel and funds.

5. Canadian journals of education: Although there is a sufficient number of Canadian journals, there is a need for more adequate and long-term funding. Journals such as the Canadian Journal of Education should be supported to increase the size of each issue or in the case of the Journal of Educational Thought to go to four issues annually. Such support would be more effective than creating new outlets.

6. Most researchers found the size of grants available adequate. In many cases, those administered by universities, that is, $2,500 and

under, are all that is needed; however, some projects such as those requiring substantial field work in sociology of education require budgets running well over $100,000.

The Strategic/Thematic Grants Programme is not opposed if adequate funding for individual scholars is continued.

7. There is very strong support for shorter turn-around time for research grant applications.

8. Separate Education Committee: For those who ordinarily publish in mainline journals, the adjudication by disciplinary committees is desirable. Others favour either a broadly constituted education committee or education representation on existing SSHRC committees. Scholars interested in retaining the present disciplinary committees did not object to an Education Committee if applicants were free to indicate their preference to be adjudicated by it or the appropriate disciplinary committee.

Chapter 9

EDUCATIONAL PSYCHOLOGY

Philip H. Winne*

THE FIELD OF EDUCATIONAL PSYCHOLOGY

The field of educational psychology is diverse. As diversity is a sign of robustness in an investment portfolio or an ecological community, so too it is valued and valuable in educational psychology. The extent of this diversity, however, has obscured the field for those not expert in it. In the following, I attempt to clear away several confusions about the substantive and the methodological nature of educational psychology that have arisen because of this diversity.

The Substantive Nature of Educational Psychology

Educational psychology is a hybrid discipline that grew from a joining of education and psychology. Clear illustrations of the parent disciplines and the buds of educational psychology are found in writings by the educationist John Dewey (e.g., Sources of a Science of Education, 1929) and the psychologist William James (e.g., Talks to Teachers on Psychology, 1907). Today, educational psychology is itself a parent to other major areas of research such as teacher effectiveness and instructional design.

The vigor and diversity of research in educational psychology is hard to reflect completely in any single scheme for classifying branches of the field. Overlap of educational psychology with areas such as counselling, special education, early childhood education and adult education also cannot

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be avoided. Nonetheless, there is a theme that ultimately unifies the field: researchers investigate the behaviour of people in settings where planned attempts are made to change a student's learning. According to this theme, the fields mentioned earlier deal with educational psychology as it relates to specific groups of learners. For instance, counselling can be characterized as an educational psychology about people who need to learn more comfortable and effective strategies for dealing with problems of their personal life (Hiebert, Martin, and Marx, 1981).

Educational psychology can be classified into three major areas. First, research on students' individual differences always has been a major focus in the field since characteristics of students influence their learning. Within this area, topics constituting major sub-areas include intelligence, motivation, problem solving and the ways these qualities develop both naturally and with instruction. Second, because education is a planned attempt to influence learning, research in educational psychology has investigated instructional procedures that influence learning. Illustrative components within this area include teaching effectiveness, classroom management techniques, features of curricula that match students' individual differences or stimulate particular kinds of information processing and computer-assisted learning. Finally, since the object of instruction is to promote students' learning, the third primary emphasis in educational psychology has been research on methods for measuring these changes. In this area, the focus has been on topics such as the design of achievement scales, procedures for observation and self-concept inventories.

These three areas - individual differences, instruction, and measurement - are not separate entities thrown together to create the field of educational psychology. Contemporary research (e.g., Schonewille, Martin, and Winne, 1978) blends all three in studying, for example, the effects of delivering reinforcers to groups of students (instructional component) who are underachievers in mathematics (individual differences component) on their classroom behaviour and learning to divide fractions (measurement component).

It is worth dealing explicitly with the common misconception that

educational psychology is not different from psychology. A survey of research in educational psychology would reveal that it clearly shares much with the discipline of psychology. Indeed, educational psychology and psychology are alike in many of their methodologies for research and theoretical constructs. But there is one clear and essential element that distinguishes educational psychology: educational psychology is necessarily concerned with education whereas psychology is not. For example, anxiety can be defined as a psychological and physiological state in which a person is aroused to avoid situations only vaguely identifiable by that person. For the psychologist, the vague situations that arouse anxiety can be driving a car, meeting new people or taking an achievement test. Psychologists can study educational situations. When they do, they engage in educational psychological research. If anxiety is studied in relation to a student's answering a teacher's questions in class, participating in extra-curricular activities like athletics, or taking an achievement test, the investigation is about educational psychology and the investigator is adopting the role of an educational psychologist. Beyond this simple criterion there is no distinction between psychology and educational psychology.

This is not a deterrent to achieving an identity for educational psychology. The volume of research in the field is obvious proof of its vitality. To strive to create an artificial division between educational psychology and psychology, or between educational psychologists and psychologists, is unnecessary. A more fruitful strategy for encouraging and sustaining research on <u>problems</u> that relate to education is to support quality research on the psychological aspects of education irrespective of the affiliation of the researcher.

This principle, that educational psychology is a focus of investigation rather than work done only by people who label themselves educational psychologists, generalizes. Teachers in classrooms, members of a research team for a school district, and university faculty members outside a department of educational psychology can do educational psychological research just as well as can people in university departments of educational

psychology or psychology. The substantive question of the research, along with a set of widely held axioms discussed in the next section, determines the character of a study, not the affiliation of the researcher.

The Methodological Nature of Educational Psychology

Educational psychology is a scientific discipline. As such, it shares with all other sciences a set of axioms that define features of research. These axioms are (1) research must integrate theoretical propositions with empirical evidence; (2) a fundamental objective of research is to identify factors that determine the generalizability of explanatory propositions; and (3) principles generated by research are statements about probabilities rather than certainties. In the next few paragraphs, these axioms are elaborated.

Theory and empiricism are integrated. Educational psychology is neither a purely theoretical nor a purely empirical field - it is an integration of these. Purely theoretical disciplines are not bound by experience. In fact, the Greek root of the word theoretical is contemplation. Mathematical number theory, in which such things as imaginary numbers exist, is a good example of a purely theoretical discipline. The word empirical also derives from a Greek word meaning "based on experience only, without contemplation." Edison's purely trial and error search through substance after substance to find a long-lived filament for the electric light bulb is a classic example of empiricism.

As with other sciences, this methodological character of the discipline implies two things. First, research in educational psychology must include both a theoretical component and an empirical component. Merely accumulating information about how people behave in educational settings does not qualify as educational psychology. Propositions about how people behave in educational settings that remain untested or are not testable by empirical methods also do not qualify as educational psychology. This does not mean

the empirical component must be data collected first hand. Re-examinations of others' data from different theoretical positions, as in secondary analyses of data and scholarly reviews of a body of literature, are appropriate and essential kinds of research in educational psychology.

The second implication is that judgements about propositions of educational psychology must be grounded in both theory and empirical observations. Theoretical statements not integrated with empirical evidence are rhetorical, not scientific, and therefore cannot be judged within the system of a science. Empirically observed relations not integrated into some theoretical framework cannot help one understand why the relation exists or how to use it in conjunction with other propositions. They merely exist, providing a good basis for craft. But craft is not science. The link, and sometimes the tension, between the theoretical and the empirical spurs the evolution of educational psychology. Neither theory nor observation precedes the other. They mature concurrently.

The generalizability of principles must be tested. This second basic premise of educational psychology concerns the extent to which propositions generated in research can be generalized across research studies, and from research to the practice of education in schools. Two points are important here. One major goal of science is to explore the limits that bound a proposition. When a specific hypothesis is investigated, a number of naturally varying conditions are set constant or controlled in order to focus precisely on the question at hand. By limiting these conditions to only one or a few of their naturally occurring states, the product of research becomes conditional. In other words, under the condition that specified features of an educational environment are set at such and such values, a relationship was observed.

Because the features of an educational environment can vary enormously, both in research studies and in schools, a proposition generated in one research study may not hold in another situation. Exact replications and minor extensions of a single study are necessary to map the terrain of situations in which a given proposition will be valid, that is, functional.

Thus one major mission of research is to identify factors over which a proposition can be generalized, and factors that limit the generalizability of a relationship.

The practical implication of this axiom is that educators must not judge too harshly when they borrow a proposition from educational psychology and find that it does not work in their own context. An extensive base of research is an essential prerequisite to deriving valid and useful prescriptions for practice from the science of educational psychology. Only when such a base has been established can practitioners be informed about boundaries describing where the principle will and will not hold and use wisely the information it provides. Without a broad base of validated knowledge, or without knowledge of the field's breadth, research findings are easily and unknowingly compromised when practitioners apply educational psychological findings to specific settings.

Propositions describe probabilities. This third premise of educational psychological research means that one goal of research is to quantify the probability that a proposition will hold within its boundary conditions. Even if the conditions under which a proposition was studied originally are repeated in new research, there is a chance that the relationship will not hold in this particular application. When this chance is large, the propositions comprising the science are not reliable. Oversight about this axiom has led many to unwarranted disenchantment with the robustness of principles derived from research in educational psychology. Again, the implication for research is clear: studies must be repeated to obtain more accurate estimates of the probability that propositions are reliable. This is crucial not only when the object of research is to generate and test knowledge, but also when there is an attempt to provide practical information for teachers.

An Unfortunate Confusion: Basic versus Applied Research

These three features of the science of educational psychology - its

integration of the theoretical and empirical, its obligation to test for generalizability and its view of principles as probabilistic - bear on an erroneous distinction between basic and applied research. The confusion surrounding tnis debate grows primarily from a misunderstanding of the axiom about testing the generalizability of propositions, but it touches on the other two axioms as well. There is no sense in trying to refute the fact that some research in educational psychology is done under conditions that do not mirror those typically found in schools. This clearly is true. For example, in laboratory studies (as they are commonly called), a researcher may use nonsense syllables to investigate relationships between learners' aptitude and learning from inductive versus deductive instructional strategies.

Some would label this kind of research basic; others might use perjorative terms like ivory tower. They would prefer field-based studies that used, say, French vocabulary in place of nonsense syllables. The results of the latter applied research appear more useful. However, we must consider the hypothesis that French vocabulary is a set of nonsense syllables for an English-speaking student. The potential value of research using nonsense syllables for second-language teaching can now be envisioned. But a possible counter to this hypothesis is to ask why the research did not use French vocabulary in the first place. On the other hand, if French words and nonsense syllables are both nonsense to the English-speaking student, the distinction is ethereal.

An educational psychologist would not be satisfied with this argument because neither position is buttressed by empirical observation. The claim that there is a distinction between learning nonsense syllables and learning French words for an English-speaking student is rhetorical, not scientific. As such distinctions may be demonstrated and explained by research, the limits of generalizations about forms of language and their learning by students will begin to be defined. Judging these limits prejudically, before research is conducted, is not advisable. In addition, such prejudice has the important disadvantage of prematurely limiting the use of other research about human learning to inform educational psychology and educational practice.

Thus, distinguishing between basic and applied studies is not fruitful. The scientific methodology that educational psychology embraces will test the generalizability of principles in its normal course of a programme of research. Science is science, regardless of whether its findings are applicable. And, as Kerlinger (1977) has argued so eloquently, supporting science rather than craft will have more potent and immediate impact.

Summary: The Scope of Educational Psychology

What has been argued in the preceding pages can be summarized in three simple points. First, educational psychology is a foundational discipline for several other areas of educational research. It focuses on the inter-relations among students' individual differences, instructional procedures and measures of learning in educational settings. This focus distinguishes educational psychology from educational theory in general and from psychology. Second, educational psychology is a social science. As such, its research integrates the theoretical and empirical, tests the conditional nature of its findings and works toward increasing the reliability of its propositions. Third, the distinction between basic research and applied research is a red herring that unjustifiably hinders the advance of the field by a prejudice about whether research contributes to solving a practical problem. Attending to the task at hand, namely building a robust science about the behaviour of people in educational settings, will achieve greater benefits than struggling to make unnecessary distinctions. Moreover, prejudicing the way that educational psychology defines and attacks a problem violates the principles of science. Pursuing research under such a prejudice promotes craft, not science.

EDUCATIONAL PSYCHOLOGY AND TEACHING: ILLUSTRATIVE LINKS

Educational psychology is probably the most active and the most vital

scientific research supporting the practice of education. The reason for this status is simple. Our society has invested schools with a responsibility to teach its children the knowledge, skills and attitudes they need to achieve individual and societal goals. Scientific study of this process to understand how it works and to prescribe how it can be carried out effectively rests on the three major foci of educational psychology: students' individual differences, instructional procedures and measures of the effects of instruction.

The quantity of Canadian research in educational psychology and its sub-fields is enormous. For instance, a brief survey of only two volumes (1979, 1980) of three major journals that were conveniently accessible (British Journal of Educational Psychology, Contemporary Educational Psychology, Journal of Educational Psychology) identified twenty articles published by Canadian researchers. The topics investigated included individual differences and the learning of rules, the effects of cooperative versus competitive settings on achievement, kindergartener's understanding of how to schedule time for learning, intelligence testing, self-concept and students' participation in extracurricular activities, how students' expectations about grades influence their reactions to teaching, students' cognitive responses to instructional events, and teacher and student behaviours in science classes.

A full status report on educational psychology in Canada is not possible in this paper. The field's vigour and diversity can be inferred from the preceding paragraph and the introductory section. Nonetheless, it is important that some detail about the field be described clearly so that it can be judged fairly. To approach this goal, I have chosen to explore very briefly two areas of research in which I have special interest. Obviously, these two areas are not fully representative of the field. I do not intend to slight other areas. But these more penetrating treatments will illustrate the character of research in educational psychology that was described earlier in general terms. Also, it will highlight the strong potential for such research to contribute both to science and to educational practice. Following these reviews, I will identify several major areas of

research warranting particular support in the immediate future.

The Educational Psychology of Teaching Effectiveness

History. In the first six decades of this century, research on teaching effectiveness was fundamentally empirical. While causal propositions linking teacher behaviours and student achievement were sought, the dominant research methodology was correlational (Dunkin and Biddle, 1974). These limiting features of research on teaching held "almost complete dominion over the conceptions that most researchers . . . brought to the field" (Gage, 1963: p. 114).

In the 1950's and early 1960's, two significant changes appeared. First, systems blossomed for categorizing in specific behavioural terms the ways teachers and students interacted during teaching. Second, the Taxonomy of Educational Objectives (Bloom, Engelhart, Furst, Hill, and Krathwohl, 1956) provided a correspondingly analytic language for describing students' learning. These developments helped researchers to frame more penetrating propositions about how students' cognitive responses to teaching affected their learning. The field's greatest weakness, that is, its "lack of adequate theories of teaching that would integrate and explain its major findings" (Dunkin and Biddle, 1974: p. 425), was about to be assaulted directly.

In the middle 1970's, educational psychologists began to explore how students' cognitions mediated between teacher behaviours and students' learning. Blending research on learning, perception and teaching, Winne and Marx (1979: p. 226) framed the issue this way:

> First, students need to develop, or if already developed, bring into use, a perceptual schema for the content of instruction. Second, a conceptually parallel schema must be brought to bear in perceiving the intentions of the teacher's actions (or the textbook's features). Finally, once these perceptual problems are solved, the student must engage in mental operations to bring about learning.

Theoretically, if teachers could directly control students' cognitive

mediations of teaching, they would stand a better chance of directing students' learning. The major questions awaiting research were, How do students cognitively mediate instruction? and How do different ways of mediating instruction affect learning?

An illustrative study. A basic teaching method is having students read. Many textbooks intersperse questions between paragraphs. The idea is that, as students try to answer the questions, they will be actively manipulating the information they have read, practising it and giving it more meaning. Research on how such adjunct questions influence reading and learning has not yet pinned down strong, generalizable principles about how such questions work (Reynolds, Standiford, and Anderson, 1979). There is, however, fairly good evidence that they have a positive impact on learning under certain circumstances (Anderson and Biddle, 1975; Rickards, 1979).

Winne (1980) tested one hypothetical explanation about how readers use adjunct questions (and other aids) as they try to learn from reading. His study was based on a theoretical model of how students mediate instruction (Winne, in press). He taught some fifth to seventh-grade students how to review certain ideas when they encountered questions in their reading materials. The procedure the students used also documented their thinking observably. To gauge the reliability and generalizability of effects, the impact of this training was assessed under two conditions: taking tests immediately after reading a text about consumer research, and taking tests on a Friday after reading materials that made up a unit about ecology on the preceding Monday through Thursday. The tests were multiple choice and essays.

Winne's findings were complicated, so only two are described here. The first finding was that, when students took a multiple choice test immediately after reading the materials, those who were brighter learned even more than their less able peers when presented adjunct questions. Thus, putting questions in reading materials might help all students reach their potential. But since brighter students started with more potential, their gains were larger than

those of less bright pupils. Questions in reading materials like this might complicate the teacher's job of discussing what students read because brighter students might dominate the discussion due to their greater learning.

But a second finding indicated that, when students in the study were trained to use adjunct questions in a particular way, the difference in gains between more and less able students' learning was lessened. This was not because brighter students learned less, but because the less able students gained more when they knew precisely how to use the questions. In other words, by controlling less able students' cognitive responses to adjunct questions, their natural disadvantage in learning was lessened somewhat.

This study clearly illustrates how theoretical and empirical aspects are integrated in educational psychology. The weakness of previous studies was that they neither controlled for, nor gathered evidence about, students' cognitive responses to instructional procedures. They were strong on theory but weak on evidence. When this was corrected by training students to respond to questions in measurable ways, the findings were scientifically useful because they related theoretical propositions about how students learn to empirical evidence.

Variations on the theme. Winne's (1980) study used reading materials in an experiment with upper elementary school students to explore this cognitive mediational model. Other researchers are pursuing this area with varying procedures. By using video tapes of lessons to cue students' recall, Winne and Marx (1981) have studied how students naturally respond cognitively to their teachers' teaching. Peterson, et al. (1981) extended this idea to a more controlled laboratory setting. They have examined how variations in the kinds of structure teachers use in lessons is related to students' cognitive mediations and to their learning. Other educational psychologists are beginning to explore student work groups in terms of the cognitive mediational model where the mediations are about motivation and learning (Webb, 1980). These studies illustrate the kinds of tests being undertaken to explore the generalizability of Winne's cognitive mediational model.

This kind of research is difficult to do. First, when the research is done in regular classrooms, the researcher must cope with a host of issues (e.g., see Winne, 1981). Since the students mediate the treatment in an experiment, extensive attention must be paid to characterizing or controlling this mediation. One way to accomplish this is to talk to every student about his or her learning style(s), as Peterson et al. (1981) did. Another procedure is to train students over a period of a week or more to standardize their mediations of teaching events, as Winne and Marx (in preparation) have done. Both procedures place heavy demands on the resources available for research.

Also, since an experiment should be done in several classrooms to test the generalizability and reliability of propositions, attention must be paid to standardizing the teaching delivered by different teachers. One strategy that responds to this concern entails extensive observations of each lesson as delivered, or videotaping the lessons for later analysis. Another procedure is to train the teachers so that they teach equivalently (e.g., Clark, Gage, Marx, Peterson, Stayrook, and Winne, 1979). Again, these procedures are costly.

Of course, there would be little gained in a series of studies if the programme of research did a good job of characterizing students' individual differences, but ignored the curriculum taught and how learning is measured. Thus, this kind of research also involves preparing a unique curriculum so that students' existing knowledge does not contaminate learning, as well as designing tests of learning to accompany this curriculum. Moreover, these tasks must delicately balance the needs of making the curriculum interesting to students, valuable for their education, usable by teachers and appropriate to the questions being addressed by the research. Procedures for developing curricula and measures of learning to meet these needs are under intensive scrutiny by educational psychologists (e.g., Gagne and Beard, 1978).

There are yet other practical matters, too numerous to catalog here, that must be attended to in research of this kind. Many of the matters needing attention are fields of research in themselves. All required sustained, rigorous and flexible support so they can provide a solid foundation for research about teaching.

This area of research also is relatively new. As such, much of the research has a double function of building and testing models for empirical events and of creating methodological procedures for furthering the research effort. This makes the field seem especially chaotic to the non-expert as it explores new territory and oscillates around propositions. It is an exciting area though, because research on the cognitive mediational model has begun to show that students can be involved directly in determining the effectiveness of instruction rather than being treated as passive learning organisms. While this idea is not new, knowing how to take advantage of it is. Moreover, this research is a much more substantial way to address teachers' concern to meet students' individual needs: it will advance the science of educational psychology and, ultimately, the practice of education.

The Educational Psychology of Motivation in School

History. Conceptions of motivation at the turn of the century posited innate drives as the cornerstones of learning and action. For example, Freud (1900) based his views on two universal drives: homeostasis (i.e., that people strive for a stable psychological condition) and hedonism (i.e., that pleasure and happiness are the primary goals of behaviour). McDougall (1908) argued that instincts or unlearned drives were the prime source of learning. According to these and other early theories, people learned to be motivated to approach or to avoid certain tasks, like reading in school, because these were associated with the satisfaction or non-satisfaction of drives, respectively. These views found widespread application in education, primarily through work by Thorndike (1913).

As research accumulated, it became more and more apparent that learners were more cognitive and selective than theories of drives could allow. Students reflected on past experiences and projected their chances for success in the future. One classic attempt to include these thought processes in accounts of students' motivation was Atkinson's (1964) work on achievement

motivation. He integrated earlier drive theories based on need for achievement (McClelland, Atkinson, Clark, and Lowell, 1953) with a cognitive view of behaviour that stressed people's expectations about their likelihood of success (Tolman, 1932) and the value or incentive they attached to success or failure (e.g., Festinger, 1942). Elegant though Atkinson's theory was, it could not describe why students continued to be poorly motivated even when they succeeded at some school tasks having high incentive value. Some unidentified factor seemed to overpower the simple law of effect that Thorndike (1932) had proposed and to influence students' expectations and assessment of incentives.

In the 1960's and early 1970's, several researchers exploring this problem (e.g., Heider, 1958; Kelley, 1967) achieved a conceptual breakthrough. They hypothesized that students, and people in general, ascribed their success or failure to varying causes. Prominent among these views was Weiner's (1970; 1972) hypothesis that students' expectations and feelings about school tasks depended on whether they thought their performance was caused by their ability, the amount of effort they expended, the ease or difficulty of the task, or a lucky or unlucky try. Several studies (e.g., Kukla, 1972) found that students' motivation was hampered if they thought their successes were due to either an easy task or luck, or if they ascribed their failures to low ability. These conceptions opened up a large area of educational psychology that sought to determine how students' attributions about the causes of their performance influenced motivation.

An illustrative study. One particularly tough problem that teachers face is motivating students who are performing poorly. This situation sometimes seems a vicious circle in which (1) low-achieving students avoid school tasks because they believe they will fail and will not receive rewards; (2) teachers subsequently lower their expectations for these students and adapt their teaching accordingly by providing them with easier tasks which (3) guarantees these students they will not reach the same levels of achievement as their classmates because they are studying less comprehensive materials. Can this downward spiral be stopped?

Before tackling this problem directly, we need to understand better what low-achieving students are doing in this kind of situation. Only when this is clear should we attempt to design an intervention to intercept or change one of these factors. A recent study by Butkowsky and Willows (1980) sheds some light on this situation. These researchers classified grade-five boys as good readers, average readers or poor readers based on the discrepancy between measures of their general ability and their performance on standard reading comprehension tests. According to measures of their general ability, all the boys were of slightly above average intelligence. Some were reading better than predicted by these tests (good readers) while others were reading more poorly (poor readers). These students then participated in an experiment examining the effects of success and of failure on motivational factors.

Briefly, the procedures of this experiment were as follows. Butkowsky and Willows involved each boy in two kinds of tasks where success or failure was prearranged. One task was a reading-like problem that called for solving anagrams (e.g., hraic can be re-arranged to spell chair). A second task, used to test for generalizability, entailed tracing a figure without retracing already drawn lines. Each boy was asked to estimate how strongly he believed he would succeed before he tried the tasks. Then, after he had completed the tasks, he was asked (1) whether his performance (success or failure) was attributable to ability, effort, luck or the task's difficulty; and (2) how well he expected to do if he tried to do several more tasks. During a boy's attempts to do the tasks, the time he persisted at ones he could not do was recorded.

A number of findings emerged from this study. Only a simplified account can be provided here. First, poor readers had low expectations of success compared to average and good readers. This is not surprising and, in fact, shows that poor readers were not misleading themselves by setting their hopes too high. But several of the other findings are very interesting.

When poor readers experienced success, 41 percent did not take credit for it. They attributed the cause of success to either an easy task or luck.

Only 23 percent of average readers and 16 percent of good readers did not take credit for success. When poor readers failed, 68 percent of them said the cause was their low ability. In contrast, only 13 percent and 12 percent of average and good readers made this attribution. Clearly, poor readers blamed themselves for failure and, more importantly, were not prone to believe that they were in control when they succeeded. Finally, when poor readers had trouble doing the experimental tasks, they persisted at trying to do the task only 60 percent as long as average or good readers. In other words, instead of trying to compensate for the low reading ability they acknowledged by giving extra effort to the task (e.g., drawing on their above-average general ability), they gave up. In addition, their expectation about failing extra tasks given that they had failed ones just completed was about 60 percent greater than average or good readers who experienced failure.

Overall, these results paint a bleak picture for poor readers' motivation. They begin with less expectation for success, do not try long enough to overcome difficulties and often do not believe they were responsible for success when they do achieve it. Moreover, when they fail, they attribute it to their low ability, even though tests show them to be potentially average or good readers. No wonder they are not motivated to read!

One implication of this study is that teachers probably will not motivate poor readers by providing them with successes at watered-down reading assignments (i.e., ones adapted to individual needs). Successes at these tasks are not interpreted by poor readers in ways that promote pride in accomplishment; they are attributed to the materials being easier or to luck. Instead of being motivating, successes of these kids further prove to the poor reader that he has low ability.

Variations on the theme. Butkowsky and Willows' (1980) finding that poor readers have learned that they are helpless (i.e., fail because of low ability, succeed because of luck or an easy task, and do not persist at hard tasks) is not isolated (e.g., Ames and Felker, 1979). Other studies on

students' motivational beliefs and attributions coalesce to suggest that some common-sense attempts to motivate poor readers may backfire.

Frieze and Snyder (1980) talked to first-, third-, and fifth-grade children of heterogeneous ability about different stories in which characters demonstrated achievement. They reported that students identified different causes of success or failure in different activities. For example, whereas success or failure on a test was generally attributed to effort (about 65 percent of the time), achievement on an art project was generally not attributed to effort (being attributed to effort only 27 percent of the time). In another study, Harari and Covington (1981) interviewed students in grades ranging from one to thirteen to uncover how they perceived their teachers' feedback. Overall, students said that teachers praised effort more than ability. In fact, younger children believed that high effort was the same as high ability. Older students reversed this latter view, claiming that really able students achieved success without having to expend lots of effort. Moreover, they acknowledged that a student who did not try hard and subsequently failed had a reasonable and easy explanation for failing. In other words, an excuse for failure is lack of persistence at a difficult task (see Covington and Omelich, 1979).

One more finding by Meyer, Bachmann, Biermann, Hempelmann, Ploger, and Spiller (1979) sets the stage for low ability students to fail and to have very weak motivation. These researchers also interviewed students to determine how they interpreted teachers' reactions (i.e., praise and criticism) to performance. They found that, when a student succeeds at an easy task and is praised by the teacher for it, the student interprets this as confirmation of low ability. A neutral reaction to failure at easy work leads to the same judgement.

Putting these various studies together yields this hypothesis: Teachers who adapt curricula to accommodate low-achieving students may set up those students to learn low levels of motivation. If these students succeed at easy tasks and are praised, or fail and are weakly encouraged to keep trying, they believe the teacher is telling them they have low ability

(Mayer et al., 1979). Though the teacher will praise effort (or persistence), having to try hard to succeed at watered-down tasks is further confirmation of low ability (Harari and Covington, 1981). Even if the teacher tries to compensate for the student's poor performance in one subject, say reading, by motivating her with praise for success in another subject, like art, the student may not generalize the perceptions she is learning about herself (Frieze and Snyder, 1980). And, when she does fail at reading, she again believes this is merely a reflection of her very poor ability. Whatever success in reading she may experience is not consistent with all this other information. Success must be due either to dumb luck or the especially easy tasks the teacher set for her (Butkowsky and Willows, 1980). Since self-degradation is inescapable if she tries to learn to read, it makes good sense from the students' point of view to avoid reading. From the teacher's perspective, the student is poorly motivated indeed.

This set of experiments involved interviewing students following their involvement in contrived tasks that were pre-arranged to insure success or failure, or following their reading about a typical event. Existing research on this crucial aspect of education, however, must not merely be extrapolated to produce principles for teaching and for designing instruction. In addition to the descriptive accounts of realistic, typical events, research about how students learn to be motived and subsequently to enact their motivation during instruction must be extended to real classroom environments and events. This follows from the axiom that the generalizability of principles must be tested rather than assumed.

As described in the earlier section about the educational psychology of teaching effectiveness, carrying research into schools is difficult. Details such as the level of difficulty of curricular tasks must be documented and controlled, as Harari and Covington's (1981) study implies. And teachers' behaviour also must be rigorously examined and manipulated to insure that the teaching that students experience is not inconsistent (e.g., Meyer et al., 1979). To these and other aspects of the school environment, the educational psychologist must add one or more treatment factors that comprise the

independent variable. The degree to which these variables are, in fact, implemented also must be ascertained. All these tasks add to the resources needed to do good research.

Two other important points should be mentioned explicitly. First, many of the issues faced by educational psychologists studying teaching effectiveness are also faced by researchers investigating motivational aspects of teaching. Though the focus of research differs, the research needs are not entirely unique. But, because the overlap of needs is not perfect, attention must be given to each area to promote its growth. If unique issues are not given credence then these areas may degenerate in their usefulness because they will be judged with reference to inappropriate criteria.

Major Foci for Future Research

The field of educational psychology is already large and continues to expand. The fact that it is a foundational discipline for other foci in education (e.g., counselling, special education) further stimulates its growth. Despite this breadth, arising from contemporary lines of research are several overarching models that have begun to unify heretofore disparate areas of the field. Substantial fiscal and other kinds of support for research into these models and cognate areas will produce clearly noticeable advances over the next decade.

One of these overarching models was depicted in the preceding two illustrations, namely, the cognitive mediational model. Those illustrations emphasized that students' thoughts about instruction can determine what they learn and how they feel about that learning. Also inherent in this model is concern for the cognitive strategies students use while learning. What remains an immediate and essential next step for this line of research is to explore models that simultaneously integrate the information-processing approach to research on teaching effectiveness with motivational research.

Once this integration is achieved, a much more complete theory will emerge about how students respond to instructional events like learning to read or answering teachers' questions. In turn, this will provide the link between teaching, learning and motivation that teachers clamor for so vigorously.

A second recently developed model stimulated by recent innovations in integrating educational psychological theory and statistical procedures also has strong potential for spurring growth in the field. One of the perennial issues in educational psychological research concerns whether research should focus on the individual or the group. Teachers usually teach a small group, but learning and motivation are processes that occur within the individual as he or she responds to the instructional environment. How can research make the best use of both perspectives of individual and group? Recent investigations of learning in small groups that focus on the interactions between individual differences and features of instruction have begun to shed light on this question by taking yet a third point of view, namely, the student's relative position in a group (e.g., Corno, 1979). Research that investigates different ways to blend these three perspectives holds significant promise for increasing both the potency and the relevancy of theories in educational psychology.

Two features about these suggested foci for future research should be noted explicitly. First, both foci are relatively independent of curriculum, which means that investigations can range over reading, arithmetic, science, personal adjustment, social development and problem solving. Indeed, this is one of their major values. Second, each one complements the other. Whereas the first stresses the individual, the second provides other perspectives on the group as a whole and on students' relative standings within groups. This prevents myopia in characterizing learning from instruction. Moreover, the divergence of these points of view is a healthy stimulant for the task of developing theory.

RECOMMENDATIONS FOR SSHRC

In the foregoing sections, I have described a number of broad issues

about the science of educational psychology and briefly illustrated the breadth of topics and methodologies currently in use in the field. While such a brief treatment of these substantial issues cannot encompass what must be considered by SSHRC to nurture research in educational psychology, a number of essential points can be extracted. In the next section, I attend to those points that bear on the substance of the field. The following section addresses practical and administrative recommendations for nurturing the field through funded research. A final section unites these to propose that SSHRC encourage the formation of centres for research in addition to increasing support for independent researchers.

Substantive Considerations

One of the major themes of this paper has been that a fundamental obligation of the science of educational psychology is to test the limits of principles. The generalizability and reliability of findings from research is a matter to be examined directly rather than assumed. Two crucial implications arise from this position. One concerns the need to support educational psychological research per se. The other pertains to the nature of investigations that should be encouraged by the SSHRC.

The findings of a single research study are conditional and probabilistic. The surest way to increase the degree of certainty about propositions generated by research is to repeat the research. Just as our judicial system relies on the convergence of several witnesses' testimony, each providing one view of an event, so research also requires multiple investigations in order to converge on reliable propositions about the psychological behaviour of people in educational settings. Thus, one clear desideratum of research is that studies be repeated. Only when the operationalization of a proposition is observed in a number of separate studies can we have a good estimate of its reliability. The direct implication for SSHRC is that they should support proposals for research that will replicate previous studies. While these replications can be

carried out in varying ways, they clearly are a key element in high-quality research.

Within the confines of a specific topic under investigation, the generalizability of principles also has direct implications for identifying the superior proposals. A programme of research should be preferred. By the word programme, I mean that there are planned components of a longitudinal research design that systematically explore factors which bear on a proposition's generalizability. There are many ways to link different research studies to examine the generalizability of principles. But, with the exception of the novice researcher (a point to be addressed later), preference should be given to proposals presenting an array of studies that systematically investigate generalizations. One-shot studies, unless they clearly relate to a series of previous studies, or unless a very strong case can be made about their potential to open up a new perspective on a problem, should be given lower priority.

Finally, the fact that educational psychological research in Canada has not received widespread support in the past has created an imbalance of trade in research results among countries. Since findings in other national contexts cannot be assumed to generalize to the Canadian educational system, SSHRC must fund replications and extensions of research already carried out elsewhere. Such funding would have a double benefit for the science by helping to determine the reliability of propositions in educational psychology and by exploring the generalizability of those propositions. But more importantly, in addition to contributing to the science of educational psychology in general, such funding would strengthen Canada's resources in educational psychology in terms of knowledge and in terms of supporting and training a workforce to contribute to educational psychology.

Overall, these recommendations suggest that SSHRC should emphasize funding proposals that describe a series of studies of a programatic nature; include both replication and tests that explore aspects of generalizability; and, where appropriate, are based on the extensive body of research available in the international literature of the field. Such a plan for funding will

enhance the extent to which research in educational psychology can generate a science on which guidelines can be based for improving the practice of education. These recommendations span the range of topical areas investigated in the field such as reading, attitude development and ethnic relations in school.

Support for research in educational psychology must be attuned to several other substantive concerns. When high-quality research is carried out in schools, resource allocation and management becomes very complicated. The illustrative studies described earlier highlighted some of these problems. Among those that warrant particular attention are the following.

When teachers and students are involved in projects, the school and its members are required to conform to demands imposed by rigorous scientific research. These institutions, with clear obligations and external pressures to pursue their own missions effectively, cannot be expected to adapt to the researcher's demands without compensation. For example, when students are removed from their normal curriculum, they must be given some means of recovering this time. Thus, SSHRC might support research into ways in which educational psychological researchers and schools could better accommodate one another. Alternatively, SSHRC might adapt some of its guidelines and policies in order to encourage educational psychologists to extend initial research into school settings. Some of these items are touched on in the next section.

One final concern regarding the substantive character of funding for research in educational psychology needs mention. Progress in a science can occur in any number of ways. Often, it materializes as the result of a long and systematic programme of research addressing a specific problem. But, two other mechanisms that produce advances also warrant support. One of these is importing a model or body of knowledge from another field. For instance, a metaphor from economics is currently being explored by Walberg and his colleagues (e.g., Walberg, Haertel, Pascarella, Junker, and Boulanger, 1981) in describing the factors contributing to learning, or what he calls

"educational productivity." Concepts about the structure of knowledge and the ways this structure is manipulated in the learner's mind have been imported from computer models of artificial intelligence, and have spurred advances in educational psychology. This is exemplified in Groen and Resnick's (1977) work on the ways in which young children attempt to solve simple arithmetic problems. Support for studies that attempt to translate and apply the models and metaphors of other disciplines to educational psychology deserve judicious attention by SSHRC. But this should not be regarded as a panacea for the problems of an area of research.

A second mechanism of progress is what might be called paradigm-breaking studies, as described by Thomas Kuhn (1962) in The Structure of Scientific Revolutions. Often, studies breaking away from the dominant paradigm are eschewed by proponents of the mainstream, as evidenced by negative reviews of proposals. Proposals for research of this character warrant special consideration because, when successful, they reorient the direction of a sub-area of the discipline. Often, even when they fail with respect to their proposed breaking of the dominant paradigm, they highlight key deficiences or clarify previously vague concepts, thereby indirectly advancing the field.

One way that SSHRC might promote these two kinds of reorientations is to encourage scholars to hold working conferences. Such conferences could bring together researchers to address a particular topic from interdisciplinary perspectives or to massage features of the dominant paradigm for research in a particular area. A good model for this idea can be found in reports describing the Conference on Studies in Teaching sponsored by the U.S. National Institute of Education in 1974. One tangible product of this event was the creation of the Institute for Research on Teaching at Michigan State University where several new directions in research on teaching are being developed. An alternative to working conferences that warrants special attention because it fosters other benefits such as the opportunity to engage in prolonged work and to provide an especially high quality training environment - is to fund centres for research. When such centres are staffed

by superior scholars, often on sabbatical from their home institutions, synergy sometimes emerges. An example is the Center for the Advanced Study of the Behavioral Sciences in Palo Alto, California.

Recommendations for SSHRC: Practical and Administrative Considerations

Creating a system to support high-quality research in educational psychology is no simple matter. Beyond the concerns outlined in the preceding section, SSHRC should consider a number of issues related to nurturing research in educational psychology. While the particulars of concern obviously vary from project to project, several general items warrant attention. These are addressed here under three major categories: institutional climate, assessment of proposals and dissemination.

Institutional climate. Carrying out research in universities, where the researcher's main job is not limited to research, requires balancing competing demands on the researcher's time. Also, the university's multiple objectives constrain the availability of key resources required by a researcher such as space for research assistants. To the extent that SSHRC can be sensitive to factors that limit or otherwise negatively influence research carried out by university professors, advances in the discipline of educational psychology will be fostered.

The recent provision of a research-time stipend for researchers is warmly welcomed. One major constraint on a university researcher's opportunity to engage in research is the demands of teaching and administration entailed in a university appointment. The research-time stipend will be doubly advantageous. First, it facilitates more research by freeing researchers from some university duties. Second, it invigorates the university's intellectual environment since young scholars are appointed to cover the duties from which the researchers have been released. Since most researchers are also committed to their teaching, SSHRC's flexible administration of the research-time stipend, which allows researchers one-half

released time to pursue research over a three-year period, should significantly nurture the discipline, ensure that course content is up to the minute and stimulates the university community as a whole.

Three changes to SSHRC's current policy would improve the climate for research in educational psychology conducted at universities. First, SSHRC should reconsider the potential advantages to research in educational psychology of covering university overhead. At present, a university has little incentive to encourage its faculty to pursue external funding from SSHRC. A university prefers that its scholars secure funding from sources that provide it with overhead costs. Hence, the opportunity for SSHRC to shape and integrate the field is effectively limited.

Credence should also be given to the argument that funded research, because it has greater scope than unfunded research, imposes greater costs and heavier responsibilities on a university. For example, in research conducted on a shoestring, research assistants do not receive a salary, office supplies are generously donated by the university, and so forth. In contrast, funded research requires that the university provide an accounting service to keep track of expenditures, salaries and the like. The greater complexity of high-quality funded research often amplifies other demands that a researcher makes upon the home institution, thereby elevating costs for the university. While this argument is not intended to relieve universities of the responsibility of fostering research, it does provide SSHRC with reason to cover the cost to the university of funded research. By lessening the economic disadvantages of research funded by SSHRC, the climate for research at universities may change to one of active encouragement rather than passive acceptance of funding by SSHRC.

A second concern pertains to limits SSHRC imposes on working hours and salaries for student assistants. I illustrate this problem with reference to my own university. As a result of recent unionization of our teaching assistants, a student studying for a masters degree and employed as a teaching assistant for a course works fifteen hours per week over a sixteen-week academic semester. The rate of pay for this work in 1980-81 was $2,700,

or approximately $11.25 per hour or $675 per month. The maximum SSHRC allows such a student is nine hours per week at $8.20 per hour, yielding a monthly income of $295 (September 1, 1980 - August 31, 1981 rates). This difference practically insures that high-quality students sought both by professors for teaching assistantships and by researchers for research assistantships will not take research positions.

This policy has, potentially, two damaging effects. First, it can have a negative effect on the quality of research because the best students cannot be attracted to it. Second, the best students, who have the potential to pursue doctoral training and who ultimately may contribute to the field of educational psychology, are denied important training experiences because economic necessities require them to take a higher-paying teaching assistantship. Thus, not only may current research suffer, but the field's capacity for high-quality future research also may be impeded because students most likely to pursue such research cannot afford to undertake apprenticeship in research programmes. The recommendation for SSHRC is simple: allow student assistantships to be paid at a rate commensurate with that paid teaching assistants (or other competing positions) at the university where the research will be conducted.

A final issue bearing on the institutional climate for research in educational psychology and on creating the resources to conduct such research in the future in Canada also relates to funding graduate students. The current policy that distinguishes between research assistants and student assistants is not conducive to optimizing graduate students' direct experience in research funded by SSHRC. Few graduate students can satisfy the requirements to qualify as research assistants under the current regulations. The limited number of grants awarded to students studying for masters degrees (two of 110 in 1979-1980) and the low award rate for doctoral fellowships (26 percent in 1979-1980 versus a 42 percent average rate of award across all disciplines) also impedes the involvement of graduate students in research. This inadvertent but real disincentive for graduate students to participate in educational psychological research can be remedied by targeting funds.

This might be done through training grants or by making the training of graduate students in research an aspect of proposals that enhances their attractiveness. The most propitious balance of these procedures is a matter for immediate consideration.

Overall, the judicious blending of research time stipends, reducing the burdens on universities by covering overhead so they will actively encourage scholars to seek funds from SSHRC, increasing the flexibility in salaries that can be paid to graduate student assistants, and promoting the training of graduate students will importantly enhance the climate for conducting research in educational psychology at universities. Under such conditions the quality and quantity of proposals emanating from educational psychologists would likely increase.

Assessment of proposals. The procedures for assessing proposals for research in educational psychology must (1) ensure that researchers' ideas are judged fairly, and (2) ensure that the research funded will significantly advance the field of educational psychology. The procedures currently used by SSHRC to assess proposals can be improved in these respects in several ways.

A number of educational psychologists have expressed discontent with the absence of clear criteria for re-assigning to NSERC proposals submitted to SSHRC, and with the lack of publicly known procedures by which assessors of proposals are identified by SSHRC. The earlier description of educational psychology in terms of students' individual differences, instructional procedures and techniques for measuring the effects of instruction provides a broad definition of topics that clearly fall within the domain of SSHRC's consideration. But, because educational psychology is an expansive science, it may not be clear to a grants officer, expert only in a limited number of areas, that a proposal is investigating one or more of these three components of educational psychology or their interactions. Thus, it is recommended that SSHRC identify a panel of expert advisors to consult on any decision to channel a proposal to NSERC. In addition, this panel could provide wide-ranging expertise in aiding SSHRC to identify appropriate proposal reviewers, a procedure that has precedent in the editorial advisory boards of journals.

These changes would significantly enhance the ability of SSHRC to respond appropriately to the proposals it receives.

Another concern in the area of proposal review pertains to Committee X, which is responsible for integrating assessors' comments in the areas of psychology, communications and educational psychology. This committee should be strengthened as far as its educational psychology component is concerned. I base this judgement on the following facts. First, not one member of the Committee currently is a member of the Canadian Association of Educational Psychologists, an association within the Canadian Society for the Study of Education. Only one of them is a member of Division 15, Educational Psychology, of the American Psychological Association. I do not intend to imply that Committee X is not highly qualified with respect to the specific areas in which its members claim expertise, but these facts show that expertise across the broad field of educational psychology is not achieved by the committee's current membership. SSHRC should rectify this deficiency, either by adding several educational psychologists to Committee X or by creating a separate committee to assess proposals in educational psychology.

Another issue involves turn-around time. At present, there is a minimum of six-and-one-half months between submission of a proposal and its final assessment by the Council. In this time, important advances or reorientations to the topic addressed in a proposal can appear in the literature and at professional meetings, thereby rendering some aspects of a proposal either impotent or ill-directed. Proposers should be given the opportunity to recast their research in light of these changes without having to submit their proposal for re-assessment, and the turn-around time for assessing proposals should be reduced to approximately four months.

A final concern involves the assessment of proposals. Some assessors fail to provide detailed and substantiating reasons for their judgements. When reviews lack these elements, proposers justifiably are critical of peer review. Proposers are obligated to substantiate their ideas because our science's tenents call for solid proof in addition to assertions, but some

assessors fail to honour this tenet in their reviews. Sometimes assessors are constructively critical in a manner that goes well beyond or outside the question addressed in the proposal. When the proposer is denied support on the basis of this kind of review, there should be a rapid means for appeal and settlement. While at first blush it is ludicrous to suggest reviews of reviewers' assessments, SSHRC may achieve this goal by requesting proposers' reactions to assessments. Over time, the advisory panel and the Educational Psychology Committee (or subcommittee of Committee X) could compile a list of fairly judged assessors, thereby improving the assessments of proposals over the long run.

Dissemination. Current limits on applying for money to publish the results of research and for travel to professional meetings to present the results of research overly constrict the ways in which research funded by SSHRC can be integrated with the broader discipline of educational psychology. Publication costs typically are nominal, for example, $50 per published page. Since most journal articles run approximately fifteen pages, only an additional $750 per grant would be needed to ensure that educational psychological research is published in the appropriate journal. SSHRC would be asked for this fee infrequently since few educational psychology journals require page fees. Nonetheless, aiding the researcher to publish the results of research in the appropriate outlet seems a significant benefit vis a vis the cost.

Another important means of communicating with one's colleagues is to present results at professional meetings. This can diminish publication lags by anywhere from six to eighteen months, and ensure that researchers in an area are aware of up-to-date information. Current costs for travel to professional meetings can become prohibitive for individuals in a country the size of Canada. Increased support for travel to present the results of research should be provided to meet the needs of timely dissemination of research results. To alleviate concerns about supporting recreational attendance at professional meetings, the support could be made contingent on the submission of proof of having presented a paper. The current $400 limit on money available for acquiring other educational psychologists'

criticisms and reactions to research is sufficient in light of current postal and telephone rates.

A General Plan for Nurturing Educational Psychology

In the proposed five-year plan for SSHRC (June, 1979), Table 2 (attached) outlined a system of priorities for the Council's support of research. In general, current policy aligns with the priorities described therein. From a perspective that does not differentiate between fields as diverse as art history, archeology, Asian studies, library science, journalism and educational psychology, these priorities are a reasonable compromise. What must not be obscured by such an overarching view, however, is the fact that different disciplines need support that is responsive to the unique nature of study entailed in each field. Just as parents would be uneasy with a school that made no strides toward nurturing their child as an individual having unique talents and needs, so too researchers are uneasy with a plan for supporting research in the social sciences and humanities that fails to respond to differences among the fields.

With respect to creating a more effective system of support for research in educational psychology, re-arrangement of several of the programme thrusts identified in Table 2 is needed. In this section, I propose and support two shifts of emphasis. A complete justification for these proposals cannot be provided in the limited space of this paper. The objective here is more reasonable: to convince SSHRC that the question of re-ordering priorities of support for educational psychological science has merit.

Support for research centres. The five-year plan gives research centres the lowest priority for support. For the science of educational psychology, this is crippling.

The need for programatic research could be facilitated significantly by a group of scholars, each with slightly different perspectives, working

Table 2: Relative Priority of Proposed Major Program Thrusts for 1980-1985

Urgency Within Each Priority	FIRST PRIORITY: Independent Research	SECOND PRIORITY: Themes of National Importance	THIRD PRIORITY: Communication of Results	FOURTH PRIORITY: Research Facilities and Instruments
A (highest)	1. post-doctoral fellowships 2. released time			
B	3. prestige fellowships	1. new themes	1. dissemination to wide public 2. scholarly communication	1. Research collections
C	4. international exchanges		3. encourage greater learned society activity	2. research facilities and instruments
D (lowest)	5. research exchanges			3. support for centres of excellence 4. research visits 5. central reference facility

EXPLANATORY NOTE: This table indicates in a rough sense how the individual program proposals under each broad priority relate to one another.

both independently and in concert on a broad problem. Such an approach to research can meet the methodological conditions of the science in a more focused manner than when the researchers work independently up to the point of publishing the results of their separate inquiries. Also, it can better facilitate an integration of primary foci (individual differences, instruction and measurement) in addressing a major area in the field. Moreover, by working in the same or proximate locations, the judicious sharing of resources such as graduate student assistants, support services and participants in research can add to the fiscal efficiency of a programme of research in ways that cannot be realized when researchers work in disparate locations.

Another important benefit of a research centre is its contribution to the institutional climate and the training of graduate students in research. While the concept can be overplayed, there is value in establishing a critical mass of educational psychologists, all addressing a major problem in varying ways. The opportunity to exchange ideas conversationally and in seminars of co-researchers and students can provide healthy stimulation. In addition to fiscal benefits, coordinating support services like secretarial service can reduce tensions that otherwise arise when one scholar has support for such essentials while another in a closely related area does not. Students can obtain a broader range of experience working with several scholars whose individual projects converge on a broad problem. They also can pursue dissertations that are an integral component of programatic inquiry rather than one-shot studies. This aids the student and ultimately the field by providing initial experience and support for novice researchers.

Other benefits of this approach can be found by examining centres already receiving support from SSHRC. It would be foolish, however, to paint only the rosy side of research centres. A possible immediate action for SSHRC is to commision a study to investigate research facilitation and management within research centres. This study, which should be undertaken jointly by research management specialists and scholars in educational psychology, could provide valuable information to SSHRC and to proposers of research centres.

Targets for research. The SSHRC five-year plan identifies several

themes of national importance for support, a few of which have been operationalized. Targeting such areas is welcomed because there is a clear need for information about major issues facing our society. Hopefully, SSHRC will extend the operational features of this programme (e.g., reorientation grants, grants for visiting professorships) to all areas of independent research.

Beyond the more specific targets mentioned earlier with regard to new directions in the field, the central role of instruction in our society suggests that a prime candidate for strategic support is the facilitation of instruction. The range of student populations (preschool through adult), settings for instruction (public schools, industry, television for instruction at a distance), and demand for quality in education lend strong support to classifying this theme as one of national importance. But perhaps the most crucial datum is this: the character of Canada's future rests solidly on the quality of education received by every child over a period of eight to twenty years of instruction. If Canada's people are its greatest resource, research on instruction is an essential contributor to achieving optimal development of this resource.

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Chapter 10

MEASUREMENT AND EVALUATION

Tom Maguire

INTRODUCTION

Testing, measurement and evaluation are all terms that are central to an understanding of present-day evaluation. Of the three, measurement is most basic. To measure something is to characterize or describe an attribute of that thing. In education, measurement often refers to the description of unobservable mental processes such as knowing, problem solving or motivation, but it may also relate to observable products such as facts recited, problems solved or perspectives after failure.

The word "testing" could safely be used as a short substitute for "the means by which educators measure." But "to test" in that context would mean "to obtain a mental measurement" and thus would lead to all kinds of misunderstandings. Careful writers avoid the term or qualify it, for example, educational testing, attitude testing and the like. It is so ingrained in the lore of education, however, that to attempt its complete abandonment would be folly.

Evaluation is the broadest term. In the past, it sometimes meant little more than measurement, but its proper use always means to attach a value to something. It could be argued that a value is a property or

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attribute of an object and thus is a measure, but it is such a special property - unstable and always leading to intense preference differences - that it deserves its own category.

In practice, empirical research in education involves testing (meaning gathering some quantities), measurement (treating the quantities in some way so they will be accepted as meaningful attributes) and evaluation (interpreting the measures as evidence for goodness or badness in the context). There are generalists - people who do all three (evaluators) - and specialists - people who do part of one (work on methods of treating measures, for example).

Although measurement and evaluation have always had a pervasive role in education, researchers are beginning to recognize that the role is both complex and problematic. In physics, (more particularly, in quantum mechanics), measurement and theory are as interwoven as threads of the same fabric. With its unobservable constructs, educational measurement and theory development have a similarly inextricable relationship. The research in measurement and evaluation is an elucidation of education itself.

In addition to the philosophical importance of measurement to the study of education, there is also the significance that arises from the basic position that feedback occupies in the psychology of instruction. Measurement and evaluation are an indispensible part of learning and instruction.

Finally, at a most practical level, the measurement and evaluation of the various educational endeavours has direct use to educational decision makers and consumers at all levels. The problems arising from this level alone, stimulate a wide array of research activities.

It is difficult to provide a definitive classification of problems that are addressed by measurement and evaluation researchers since, as in any other field, research foci are determined as much by the creativity and interests of the researchers as by any constraints imposed from elsewhere. Nevertheless, there are many recurring themes that appear in the literature and some of these are grouped in Table 1. The list shown in Table 1 is

intended to be illustrative rather than inclusive and so does not include all of the topics that might be found in even a single issue of a journal that serves the field. Special mention must be made about the appearance of applied statistics in the list. While it is true that there is no need for statistical applications in education to be connected to measurement and evaluation, many of the scholars in the field carry this dual interest, and, consequently, journals in educational measurement often contain articles in applied statistics. In addition, there are historical connections between the two areas - work in one has stimulated developments in the other - that make the inclusion reasonable.

In order to get a flavour for the kinds of problems that interest researchers in measurement and evaluation, four areas have been selected to portray the diversity of content, method, purpose and source of research. These are (1) the assessment of student achievement on a provincial, national or international basis using large-scale assessment programmes; (2) the development, evaluation and use of latent trait models for measuring educational achievement; (3) the investigation of item and test bias; and (4) the development of new methods for programme evaluation.

Table 1

Some Topics of Interest to Researchers in Testing, Measurement and Evaluation

1. Measurement Theory
   1) estimating reliability
   2) scaling of response using latent traits
   3) equating test scores
   4) referencing tests to curriculum
   5) sampling
2. Instrument Design Construction and Administration
   1) achievement test construction
   2) scoring essay examinations
   3) attitude scale construction
   4) computer-assisted testing
3. Measurement Applications
   1) selection of students
   2) certification of competence in the trades
   3) measuring student achievement in the classroom
   4) measuring changes in teacher attitudes
4. Evaluation Theory
   1) the goals of evaluation
   2) evaluation contexts and their relations to outcomes
   3) aggregating results
   4) the politics of evaluation
   5) goal-free evaluation
5. Evaluation Methods
   1) case studies
   2) adversary evaluation
   3) decision-oriented procedure
6. Evaluation Applications
   1) curriculum evaluation
   2) teacher evaluation
   3) needs assessments
7. Social Concerns in Measurement and Evaluation
   1) item and test bias
   2) standard setting and minimal competency
   3) validity of IQ tests
8. Social Concerns in Measurement and Evaluation
   1) item and test bias
   2) standard setting and minimal competency
   3) validity of IQ tests
9. Applied Statistics
   1) factor analysis, cluster analysis, analysis of covariance structures
   2) scaling, dual scaling, latent trait models
   3) general linear models for analysis of quantitative and qualitative data
   4) hierarchical models

EXAMPLE RESEARCH AREAS

Large-Scale Assessment Programmes

Large-scale assessment programmes are surveys that are designed to describe the levels of achievement attained by students within an educational jurisdiction. In Canada, such programmes have generally been sponsored by provincial departments of education. In other countries surveys have been undertaken at a national level. Occasionally, international assessments are conducted, usually in a particular subject matter area. Generally, assessment programmes involve several steps: specification of content, development and trial of instruments, creation of a sampling design, administration, scoring, aggregation of results, reporting and interpretation.

One of the most ambitious national assessments is the National Assessment of Educational Progress in the United States, which has been described by Womer and Martin (1980). The programme was designed to measure the knowledges, skills and attitudes of Americans of ages nine, thirteen, seventeen and twenty-six to thirty-five. Periodic assessments are undertaken in ten learning areas so that changes over time can be detected. In addition, provisions are made to insert special "probes" when special circumstances arise.

Because of the magnitude of assessment studies, they almost invariably involve a large number of researchers from both measurement and the content areas working in cooperation. Those that are funded by governments tend to result in reports that become part of the "fugitive" educational research literature available to those who know enough to ask for them. One exception to this in Canada has been the British Columbian assessment, which has resulted in at least two articles in the Canadian Journal of Education, Hobbs and Erickson (1980) and Robitaille and Sherrill (1979).

Apart from the assessments themselves, measurement people are involved in solving technical problems that arise in carrying out the studies. For

example, since one generally wants to obtain as much information about a population as possible without taking too much of any one respondent's time, procedures for sampling items as well as people have been developed. Shoemaker (1973) has shown how estimates of performance in populations can be made when 'matrix sampling' is used to combine item samples with people samples. Another technical problem relates to placing performance in a particular subject on a continuum that covers several grade levels.

Once the assessment has been carried out, analysis and interpretation of the results is undertaken. In Alberta, interpretation panels were used to make judgements about the results of an assessment of achievement in several subjects at three grade levels. This procedure is in contrast to a priori procedures such as those devised by Angoff (1971) or Nedelsky (1954). The setting of standards remains a problem faced by measurement researchers, both at a statistical level and at a philosophical level. Devoting an entire issue (Volume 15, No. 4) of the Journal of Educational Measurement attests to the importance of this problem.

Other kinds of post hoc analyses are exemplified by Sawada, Olsen and Sigurdson's (1981) study on sex differences in mathematics achievement. It is likely that if properly banked in a way similar to Statistics Canada data, researchers would be more inclined to become involved in intensive re-analyses of banked data, for example, in comparing different regions, previous educational experiences, etc.

An interesting application of assessment studies has been the description of differences in levels of achievement of children in a jurisdiction measured at widely separated time intervals. Clarke, Nyberg and Worth (1977) were able to follow up on an assessment of Edmonton Grade three children which had been made in 1956. They administered the same instruments in 1977 and were able to show areas of achievement where the two groups differed. Hedges (1977) attempted an even more ambitious comparison covering three generations of students in St. Catherines, and although the results have been criticized by Winne (1979), such an extensive use of archival information in the measurement field represents a new potential for investigation.

International assessment programmes with their confounding difficulties

of language and cultural differences are a further variation of large-scale assessments. The International Association for the Evaluation of Educational Achievement (IEA) is a group consisting of members from over thirty countries. It has conducted seven major surveys of educational achievement in the past twenty years. The most recent ones were reported in 1975 and cover three areas: English as a foreign language (Lewis and Massad, 1975); French as a foreign language (Carroll, 1975); and civics (Torney, Oppenheim and Parnn, 1975). A second mathematics achievement study is currently underway with Ontario and British Columbia participating. Because of the provincial nature of the Canadian educational scene, researchers in the math study who represent different provinces are organized as "countries" for the purpose of planning and data collection. Although the reporting of original results has been a major goal of research in IEA studies, researchers have used the data in combination with data from other sources to address problems of interest (see, for example, Raven, 1980).

During the development of assessment programmes, particularly those which are associated with provincial ministries of education, there has been an increasing recognition that the problems of scale might best be attacked by computer technology. For example, scoring instruments and storing the results in a fashion amenable to analytical strategies that may involve the use of data from several sources has increased the need for computer competence in measurement. Item banks are becoming popular, often as an offshoot of an assessment programme, and the problems of efficient storage and retrieval require significant computing-science skills. As assessment programmes begin to incorporate more open-ended or even individualized forms, computer technology will take on even greater importance.

Development, Evaluation and Use of Latent Trait Models for Measuring Educational Achievement

Latent trait models are mathematical models that relate a student's performance on an item to that student's position on an underlying (latent)

continuum of achievement. Each item is seen as being located at a fixed position on the same continuum and that position stays the same regardless of which students have responded to it, and regardless of what other items are found on the test. A person's place on the continuum is determined by the items that he or she can answer correctly so that anyone who gets a particular item correct is located above that item on the continuum.

Of course, such a deterministic model is inconsistent with what is known about the variability in human performance and errors of measurement, so in most latent trait models the relationship between performance (getting the item correct) and ability (position on the latent continuum) is stated as a probability.

The most commonly used latent trait models relate the probability of getting an item correct to the position of the student on the latent continuum by means of one, two or three parameters that are characteristic of the items. The one-parameter, or Rasch, model uses only the item difficulty to relate performance to ability. The two-parameter model includes item discrimination as well as difficulty, and the three-parameter model incorporates a guessing parameter in addition to difficulty and discrimination. These models were developed by Rasch (1966), Lord and Novick (1968), Birnbaum (1969) and others, and were popularized by Wright and Stone (1979) and their colleagues, and by Hambleton (1977) and his colleagues. According to these models the relationship between performance and ability can be portrayed by mathematical functions such as the normal ogive or logistic. The plots of these relationships are known as item-characteristic curves.

The latent trait models all make certain assumptions about test performance. Preeminent amongst these is that a domain of achievement can be thought of as a single latent continuum. Other assumptions relate to the form of the characteristic curves and the independence of responses for people at the same ability level.

Latent trait researchers investigate a variety of problems. Some are interested in model development and extension to a wider range of applications such as categorical response models and multidimensional models. Other

researchers have looked at the operating characteristics of various models. Hambleton and Traub at the Ontario Institute for Studies in Education (1971), for example, used computer-simulated data to examine the relative efficiency of one-, two- and three-parameter models. Whitely (1980) and others have tried to relate item parameters to characteristics or facets of item content.

Because the computational methods involve estimating large numbers of item and people parameters, a further area of interest has been in the development of efficient computing algorithms (see, for example, Urry, 1977). In some cases the effort has involved simplifying approximations; in others the approach was essentially a reconception in numerical analysis.

As noted earlier, the latent trait models are based on assumptions, and in most practical settings these assumptions are violated to a greater or lesser extent. Robustness studies have been carried out to describe how the results are affected by violations in assumptions. Such studies generally involve simulations in which item data are generated using models that systematically violate one or two assumptions. The simulated data are then analyzed in the usual fashion and results compared to the input to see how badly the parameters are warped in trying to fit the model. In a more formal way the statistical characteristics of parameters have been examined by researchers with the result that defensible tests for fit and for differences among populations are in the offing.

In a practical vein, when latent models are appropriate, they offer solutions to several testing problems such as vertical equating and sample independence. Vertical equating is based on the notion that a single continuum can span several grade levels of achievement in a particular domain. According to latent trait theory, students at different levels should be able to take different tests that are appropriate to their abilities and be placed on the same continuum. The notion of sample independence means that item parameter estimates should remain constant regardless of the sample of students upon whom the estimates were made, and regardless of the other items in the pool. Much effort has been expended in trying to establish the validity of these and other claims particularly as they apply to one parameter

models. Wright and his associates have been particularly active proponents in this area, and their advocacy has provoked a good deal of uncritical acceptance from others. One of the great controversies in measurement and evaluation in the 1980's will likely revolve around the extent to which claims made for latent trait models are valid.

Finally, reports of the application of latent trait models to general assessment data have been made by several researchers (e.g. Lord, 1977; Marco, 1977; Rentz, 1977; Bock and Mislevy, 1981), although the most complete applications are to be found in the literature of government reports, conference papers and in-house bulletins.

Item and Test Bias

Although the roots of the test bias literature go back several decades into the work on culture-free testing, the more recent pressure of the civil rights movement in the United States since the mid sixties has led to a spate of research into item and test bias. The definitions of these terms are many, but roughly speaking, they each revolve around the notion that if individuals of different identifiable groups possess the same ability, but do not have the same likelihood of success on an instrument, then that instrument is biased.

Measurement researchers have attended to several aspects of test bias. At the most theoretical level, bias detection procedures have been proposed based on conventional item statistics, latent trait parameters, and other statistical procedures such as chi square. The utility, validity and sensitivity of the various procedures have been investigated using experimental data, simulated item response data and "logical analysis." The questions of sensitivity have usually taken the path of comparing different strategies of bias detection (Rudner, Getson and Knight, 1980), but occasionally comparison of item bias hypotheses with competing hypotheses, such as guessing, difficulty or discrimination, have been undertaken (Marascuilo and Slaughter, 1981).

A second kind of study engaged in by measurement researchers is in the use of item detection procedures to investigate specific tests. Reynolds (1980) looked for sex and race bias in a preschool test battery; Temp (1971) examined Black-White differences in the Scholastic Aptitude Tests; and Donlon, Hicks and Wallmark (1980) examined sex differences in item responses in the Graduate Record Exam. All of these are examples of research characterized by an application of numerical detection procedures to responses given by different identifiable groups.

Of particular interest in Canada is the study recently completed by Holmes (1980) in which she assessed the applicability of currently used American and British norms for five commonly used individually administered intelligence tests. Using a representative provincial sample of students in British Columbia, statistical tests revealed that children at three different age levels scored significantly higher and with less variability compared to the original standardization samples. Thus new norms tables for use in British Columbia were prepared for each test.

A different kind of procedure to detect item bias derives from studies of sexist and racist language in textbooks. Zoref and Williams (1980) rated content bias in five intelligence tests according to race and sex stereotypes. Their work is similar to that of Donlon, Ekstrom, Lockheed and Harris (1977) in the area of achievement tests, although the latter group went beyond the mere identification of content bias and examined achievement performance consequences.

In an experimental vein, Schmeiser and Fergusen (1978) used an experimental design to investigate differences in performance of Black and White students on test materials containing content based on Black and White cultures. This research was carried out by the American College Testing Program and was a part of a background study for the development of an English usage test and a social studies reading test.

Unlike latent trait theory, which can be an area of almost "pure" measurement research, item bias research arises out of a particular social and political environment. Most studies have been conducted in the United States, but as various rights become entrenched in the Canadian constitution,

attention of researchers in this country may be directed toward similar problems. Philosophical analysis of the notion of bias within a "mosaic culture" as contrasted with a "melting pot" culture may lead to different definitions of bias and to a distinctive line of research. The boundary area covering bias research and law research has not been carefully explored; given the differences in cultural expectations and differences in law among various countries, research in this area will need to have a distinctly Canadian flavour to be of use in Canada.

At some point a re-examination of the definitions of bias will need to be undertaken in light of the evolving redefinition of the goals of public education. The contextual nature of bias has been recognized by Gardner (1978), but an analysis of that notion is yet to be found in the measurement literature.

New Methods in Evaluation

As noted earlier, the emergence of educational evaluation as a subspecialty in education is a relatively recent phenomenon. Nevertheless, during the last fifteen years there has been feverish development in the creation of new approaches to evaluation in an attempt to meet an increasing variety of educational demands. Because the nature of evaluation is intrinsically tied to the establishment of merit or worth of something, it soon became clear to evaluators that the penchant for objectivity that characterized traditional measurement approaches would not be entirely satisfactory for situations calling for judging and valuing. Thus, much of the important work in evaluation has been directed toward the integration of judgements and valuing into assessment of programmes, products and innovations. Many of the strategies have been borrowed and adapted. Others represent new developments in their own right.

Four strategies for educational evaluation have been selected to exemplify the range of developments that have taken place. The first is a statistical strategy for combining results from many studies. The second is

a plan for evaluation that uses a legal metaphor to guide the judgement process. The third looks at evaluation as connoisseurship, and the fourth emphasizes responsiveness.

Glass (1976) noted that educational research findings are fragile. They vary across contexts, kinds of subjects, and many other factors. He pointed out that there is a need to be able to combine the results from several studies into a single estimate of treatment effect. Although not directly arising out of a particular evaluation problem, the techniques that Glass has developed have been applied to a number of evaluation problems such as the relationship between class size and achievement, psychotherapy outcome research, and several others. The strategy consists of standardizing estimates of treatment effects, then averaging them to reach an overall estimate. While simple in principle, the results of "meta-analysis" provide a substantial improvement over the vote-counting techniques that were used in the past. In counting votes, the reviewer merely attended to the significances and non-significances of the studies that were reviewed and tallied them to reach a decision.

One drawback to the Glass method is that there is no direct way of weighting studies to reflect critical design considerations or even situational complexities. Willson (1981) has explored Bayesian strategies for combining results from several studies. Bayesian approaches have the potential of overcoming some of the niggling problems of "average effect approaches" since they can incorporate different weights for different studies, and can be responsive to additional information coming from newly found studies.

In a more qualitative line, Wolfe (summarized in Wolfe, 1979) has developed and assessed judicial evaluation methods, which he describes as using "law as a metaphor." While not proposing a rigid methodological structure, four stages form the skeleton of the process: (1) issue generation; (2) issue selection; (3) preparation of arguments; and (4) public hearing or clarification forum. The judicial model has been applied in a number of settings from the evaluation of a university department to

the evaluation of a complex educational innovation in team teaching.

A different approach to qualitative evaluation is described by Eisner (1979), who uses the notion of connoisseurship and criticism to capture some of the elusive judgemental factors in evaluation. Borrowing heavily from evaluation in fine arts, Eisner notes that some of what occurs in educational programmes is not amenable to translation into words and numbers even though the eyes and ears of highly knowledgeable and discriminating people are able to detect subtle variations. As in the case of wine tasters, educational connoisseurs should be able to engage in a level of criticism that has validity for recommending change. Eisner and his students have developed this theme in a series of evaluation studies involving different content areas including both art and mathematics.

Case study evaluation has assumed an increasingly prominent status amongst educational evaluators in the past few years. One of its major proponents has been Stake (1978). Based on attempts to integrate varieties of data into evaluation studies, Stake realized the importance of trying to get a complete picture of the educational programme being evaluated. His philosophical orientation was toward custom building each evaluation in order to be responsive to the interests and needs of the various clients being served by the evaluation. The prime methodological imperatives became: observe, find issues, understand and portray. With experience in several large-scale evaluation studies, Stake became more persuaded that the case study is tailor made for situations in which it is important to convey a holistic and dynamically rich account of an educational programme. In much of educational evaluation, generalization is commonly needed from one case to another rather than from one case to a population of cases. Thus, demands for typicality and representativeness give way to the requirement that the target case has been accurately portrayed.

The influence of American evaluation methodology on the Canadian scene has been strong. However, recently there has been a greater realization that the differences in political and social contexts that surround education in the two countries have significant implications to Canadian evaluative

practice. (See, for example, Wilson, 1979; Maguire, 1979.) In this country, there is greater freedom from bureaucratic specification of how the evaluation should be conducted that should allow for greater creativity in developing and trying different evaluation procedures. On the other hand, since education is largely a provincial affair, there is almost no demand for national studies. This means that the methodological innovations have tended to be small, underfunded and not widely reported.

PROBLEM AREAS AFFECTING RESEARCH

The Connections With Allied Fields

From the descriptions of the four areas, one can see that the area of measurement and evaluation has had close ties with two fields, namely, psychology and statistics. Both connections are exemplified by the titles and contents of journals that serve the area. An unfortunate consequence of this is that educational research-funding agencies have reassigned or even turned back proposals for research in measurement that are judged to be statistical or psychological when in fact they are legitimately in the educational field. While it may be true that valid assessments of merit of particular proposals may be assisted by opinions of referees chosen from these fields, the principal responsibility for deciding what is relevant to the area must remain with those who are actively involved in measurement and evaluation research.

Having noted that the connections with allied fields may be problematic from a funding perspective, it must be acknowledged that methodological borrowings have contributed much to the success enjoyed by measurement and evaluation researchers. Computer simulation, formal mathematical development, experimental manipulations, observations, philosophical analysis and multivariate analysis are only some of the methods employed by researchers in the field. Clearly, such a variety of methods makes it difficult to define

boundaries for research in measurement and evaluation in education.

The Organization and Support of Research in Measurement and Evaluation

Research in educational measurement and evaluation in Canada takes place in a variety of settings. Several universities offer post-graduate research opportunities in education, and at least one has a department of measurement and evaluation. Provincial governments conduct research in measurement and evaluation, particularly with regard to the development of tests and assessment of achievement. The latter activity has been often carried out in cooperation with other agencies such as universities and school districts. Most large school districts have research divisions which carry out applied measurement and evaluation research some of which is published in national journals and reported at national conventions. There are a few efforts from research institutes, both privately and publicly funded, but these are generally done on a contract basis for a particular client, and the reports seldom receive broad circulation.

Finally, there are many government and private agencies which are involved with education, and some of these conduct measurement research as part of their activities. Some examples are the military, prison systems, professional associations such as the Royal College of Physicians and Surgeons, apprenticeship boards, youth associations, unions, and human rights commissions. While much of the research is directed toward particular applications, some has found its way into the general literature in the field. A good example of this is the clinical-competence-assessment research which is being applied in other fields.

Implicit in the list of agencies in which research is undertaken is the notion that those agencies support the research that is conducted. In the case of non-university agencies, the support is directed toward the solution of specific problems that affect the agencies directly. While such problems are pressing to the agency involved, and while their solutions may be generalizable to other circumstances, there is often little spill-over to

the broader research community. The principal agency for research of a general nature is the university, and the problems of funding are the same problems that exist in other branches of education, in other social sciences and in academia generally.

There are several problems that arise out of the way in which measurement and evaluation research is organized. Because much of the research is conducted within agencies other than universities either through external contract, or in house, it often goes unreported in the general literature. As a consequence, it is difficult for investigators to build upon the work of others. Attempts have been made at national conferences to bring researchers from provincial ministries of education together to report on the results of provincial assessment programmes, but these activities have been the exception to the general situation.

A second problem arises from the provincial organization of schooling. As in almost every other line of educational innovation, the potential advantage of variety of approach that accrues from ten systems is partly offset by a monumental waste of resources and duplication of effort in routine development matters such as the creation of assessment item pools and educational product evaluation. Coordinated research and development efforts at the applications level would benefit not only the school systems but also other agencies that have education and training responsibilities.

A more subtle problem that has arisen from the need for non-university agencies to conduct problem-oriented research has been the draining of human resources from the more basic research areas through contracts and consultancies. Apart from a few notable exceptions, much of the basic research is imported from Britain, United States, Sweden and even Australia. Some of our most promising graduates have left the country in order to pursue research careers in other countries because basic psychometric research does not have a high profile in this country. Importing basic research is not merely a national embarrassment, it also means that the significant problems are defined elsewhere with the result that many distinctively Canadian educational issues are overlooked. The examples are many: in licensing examinations in the

professions, little has been done to develop ways of estimating the equivalence of French and English versions of the same instrument; in integrating immigrant children into one of ten different school systems, there are few available placement aids for dealing with children whose mother tongue may be neither French nor English; there is no post high school aptitude test with Canadian norms that would aid students in choosing a career, etc.

Although the number of measurement and evaluation researchers located in universities is relatively small (probably less than twenty-five in the entire country), the audience served by the research is great. In a diploma-oriented society, measurement and evaluation assumed prominance that is consistent with the demand for credentials. Unfortunately, many of the problems that faced assessors fifty years ago still exist, while the need for creative research into problems in measurement and evalution goes undiminished. Computer-assisted testing, vocational guidance tests for vocations that do not exist, evaluation of educational hardware, development of placement procedures for helping students who move from one region to another, are only a few areas of research that demand attention. Meeting the demand of measurement and evaluation research and development in both the public and private sectors will require a substantial increase in training capacity.

GENERAL RECOMMENDATIONS

1. SSHRC should have an "education desk," staffed by someone trained in education and knowledgeable about current research and development in the field. The Canadian Society for the Study of Education is one of the largest of the Learned Societies and one of the largest members of the Social Sciences Federation of Canada. It represents a field that is complicated by its overlap with other areas and by federal-provincial jurisdictional issues. Because of its complexity, education is not being adequately

served by current staff. The most disturbing practice is the arbitrary behaviour of Council staff who reassign education proposals to other councils (e.g., the National Science and Engineering Research Council) because they apparently do not understand the purposes of educational research.

2. Continued support of doctoral fellowships and research-grants programmes is essential for a healthy research community. It is important that resources not be drained from these programmes to support thematic research. Government-defined projects have not shown sufficient promise in the social sciences to warrant overwhelming support, particularly in view of the added disadvantage of taking human resources from the pursuit of independent research.

   The support of independent research programmes is important. Too often in the past, research monies have been spent on single studies that satisfied a passing interest for the researcher. In the adjudication process it is important that all recommended studies be well based both in theory and in previous research.

   Individuals should be encouraged to seek funding for programmes of research within a review context that monitors the research at logical breakpoints.

3. Provision should be made for the support of small conference series. At the moment, funds are available for small conferences, but often these conferences require follow-up activity in order to realize their full potential. If it were possible for participants to meet three times over a

period of two years, joint research programmes could actually be planned and implemented.

4. Support should also be provided for funding summer institutes at which scholars could meet for a fairly extended period of time (perhaps up to a month) to address issues related to their fields.

5. A system for storing and retrieving fugitive documents should be supported. Such a system might be shared with other fields such as the humanities and sciences, and might appropriately be coupled with some of the efforts of the National Research Council as a demonstration facility for Teledon.

6. Continued financial support should be provided for the educational research journals that have been described as regional. In spite of the regional natures of their titles, such journals have won a place for themselves both nationally and internationally. Support should be tied to certain minimal conditions such as a national editorial board, and care should be taken to insure that the standards of articles remains high. To withdraw support simply because a journal's title has a regional appearance does not serve the field well.

7. As in the physical sciences, the current reduction in university staff in most areas of the country means that there are very few young talented researchers. Proposals for "banking" talent should be entertained with a view to preventing the drop in research productivity which will likely occur in the next decade or so.

RECOMMENDATIONS SPECIFIC TO THE AREA OF MEASUREMENT AND EVALUATION

1. Measurement and evaluation share much with the allied fields of psychology and applied statistics. It is clearly in the social sciences area yet often research appears to fit more closely with the work of the Natural Sciences and Engineering Research Council, particularly when the work overlaps with statistics or computer applications. Adjudication of such grant proposals is a problem in that it must be fair to the applicant and, therefore, be judged in the context of his field by knowledgeable peers, while at the same time being accountable to the public purse and judged by people from the academic area involved. It is recommended that the adjudication process remain within SSHRC, with experts from outside the social sciences called in as necessary, and that the practice of referring measurement and evaluation proposals that have a strong statistical orientation to other councils stop.

2. Since much of the important research in the area is reported at conferences in the United States (National Council of Measurement in Education, Psychometric Society and American Educational Research Association) provisions for travel to these conferences should be made available in addition to the support that already exists for travel to the Learned Societies meetings.

3. Because much of the research in measurement and evaluation in Canada goes unreported in the general literature, a conference should be funded which brings researchers from the various agencies together for the purposes of developing vehicles for the more efficient dissemination of findings.

4. The need for measurement and evaluation researchers on various educational fronts is exceeding the capacity of university training. To address the problem, a two-phase project should be funded. In phase one, a needs description and projection should be undertaken, and in phase two specific proposals (including selection, curriculum, practicum, placement and funding) should be developed to ameliorate the problems.*

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* The ideas and many of the statements in this chapter came from discussions with various people in the field. In particular Ross Traub, Les McLean and Merl Wahlstrom of the Ontario Institute for Studies in Education contributed much to the organization of the chapter.

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Chapter 11

SPECIAL EDUCATION

Carol M. Reich

The field of special education is assuming increasing importance within education as a whole. At a time when general school enrolments are declining, special education enrolments are increasing.

As discussed in a report prepared for the Commission on Declining Enrolments in Ontario (CODE) (Kobrick and Reich, 1978), four factors appear to be involved. There is, first of all, an increase in the survival rate of premature and handicapped infants. There is also a continuing effort by boards of education and other agencies to increase the universality of special education services. While estimates of the incidence of exceptionality vary widely, the CELDIC Report (1970) places it between 12 percent and 16 percent. In its 1965 study, the Dominion Bureau of Statistics found that only 2 percent of children across Canada were enrolled in special education programmes. Statistics from the Ontario Ministry of Education for 1976-77 showed that 12.3 percent of all school-aged children in Ontario were receiving some type of special education. While these figures do not have a comparable base, they reflect the intuition of most educators that numbers have increased substantially (see Kendall, 1980; White, 1980).

Third, the field has been moving away from categorical definitions of exceptionality to ones which identify children in terms of specific educational needs. Thus educators have become more aware of the special needs of large numbers of children who do not have a general disability, such as retardation or hearing impairment, but do have significant educational problems. A fourth factor identified in the CODE report is the

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trend toward identifying and providing special services for exceptional children at the preschool level.

Special education is also enjoying increased public support. This is due to increases in the population of exceptional children, as well as the political activity of organized parents' groups and the general concern within society for greater equality of opportunity. This support is reflected legislatively in recently enacted laws which require boards to make special education universally available. The most widely known of these is Public Law 94-142 in the United States, which was enacted in 1975. Currently in Canada, four provinces have mandatory legislation: Nova Scotia, Manitoba, Saskatchewan and Ontario. However, the ethic of universal provision is well established throughout the profession. Both the CELDIC Report of 1970, and its British counterpart, the Warnock Report of 1978, recommended that such legislation be adopted (Karagianis and Nesbit, 1980).

Yet, special education has received little funding from SSHRC even compared to education as a whole. Of the 230 proposals submitted in education between 1975 and 1980, only twelve (5 percent) represented special education. Of the grants awarded, again only 5 percent were classified as special education.

This may reflect the fact that special education is still in the process of emerging as a well-defined field. To some extent, recent increases in the special education population reflect the increased maturity of the field and its growing ability to identify and serve its proper client group.

In the past, handicapped children were excluded from school and often from the eyes of the neighbours and the community. Whatever services were provided were usually offered by religious groups, parents' organizations or non-educational agencies (Chambers, 1980). The educational system first became involved with severely handicapped children such as the deaf, the blind and the mentally retarded. But special education was highly dependent on other professions to identify, classify and assess the children it served.

Programming was left to teachers, but few teachers had specialized training, and special education classes were often the repository for inadequate teachers whom an administrator wished to bar from the classroom, or inexperienced teachers who had few job choices.

Since the 1950's, special education has begun to develop as an educational field in its own right, one which has its own goals, constructs, techniques and procedures. Specialized teacher training is more widely available, although Canada still does not provide training in all areas of exceptionality. Nevertheless there is a small but increasing number of graduate programmes and all faculties of education within Canada offer teacher training in one or more areas related to special education. Enrolments within these programmes are generally increasing.

The low level of research funding by SSHRC derives in part from special education's status as a part of education and also from its relative newness as a subfield within education. This paper explores some of the characteristics of the field of special education which present funding problems and attempts to develop recommendations directed at improving the level of research support.

The first section of the paper discusses the nature of special education as a field and some current trends within the field which bear upon the nature of ongoing research. The second section outlines the major forms of research that are typically undertaken. The third considers the personnel and financial resources available for research; the fourth discusses some general substantive issues which arise out of the nature of special education research and which appear to constrain the availability of SSHRC funds; the fifth deals similarly with operational and procedural issues. Both the fourth and fifth sections include recommendations directed at each of the problem areas.

WHAT IS SPECIAL EDUCATION?

In a widely used general text, Kirk and Gallagher (1979) define an

exceptional child as follows:

> Any child is educationally exceptional if the educational development deviates in kind and degree to such an extent that it requires educational provision not needed by most children for maximum development. (p. 4)

Using this definition, I will define special education as the educational provisions required for such children. This definition of special education has several important features and implications.

First, special education is concerned with education. Thus, recognizing that the child's educational development may deviate as a result of non-intellective factors, special education is primarily concerned with the consequences of any handicap for the child's education (Kendall, 1980). Special education is thus intimately dependent on the role society assigns to education as a whole. It is thus differentiated in its concern from allied fields such as medicine, the primary concern of which is physical health; psychiatry/psychology, the primary concern of which is social and emotional development; and other disciplines such as speech pathology, occupational therapy and social work, each of which has its own special domain.

However, this division of responsibility is not easy to maintain. One reason is that the role of education in society is very broad. Although there is not total consensus, there does exist general agreement that the goals of schooling - while including core skills such as reading, mathematics and general knowledge - should also include non-intellective skills such as vocational preparation, social behaviour, citizenship training and moral development (Livingstone and Hart, 1981).

Part of the reality facing education is that, even if schools tried to focus only on traditional academic skills, it would be impossible to do so because non-intellective factors impinge upon, and are in turn impinged upon, by intellective factors.

This is evident from research on the role of self-concept in learning. Based on a review of the area, Beane, Lipka and Ludewig (1980) conclude that self-concept interacts with a wide variety of learning behaviours and school

achievement and is affected by the way in which teaching and learning are organized within a school. If this is true for non-handicapped children, it is even more critical for exceptional children. Thus, it is important that special education programmes be designed with the social and emotional growth of students in view.

However, non-intellective factors play a particular role in the case of specific handicaps. For example, with a child who is severely retarded, the need to teach toileting skills would seem to take priority over academic concerns. Whether or not training in self-care should take place in schools, this is where it does occur for retarded children who are in the community. Such training might be seen as prerequisite to more conventional education which has direct academic, vocational and affective goals. Language training is also obviously prerequisite to any literacy programme.

Some educational goals for exceptional children might be described as compensatory. A child with poor vision may require some modified route to reading, either a reading aide or training in braille. This will likely be a permanent component of the child's reading behaviour.

Special education may also be life-long. Exceptional individuals may require service outside of school hours or after the normal school-leaving age. The development of early identification programmes has produced a population of children who are seen as benefitting from service prior to school age. Because of their slower rate of learning or because of limits on their ability to learn, exceptional individuals may also require more years of schooling to achieve the same educational and vocational goals, or may require special services in order to function adequately in o the community as adults. Since schooling has been historically restricted to part of the day for part of an individual's life, special education continues to be carried out by health, welfare, religious and other types of agencies in addition to the schools.

Because special education is concerned with non-intellective factors and must embrace prerequisite, compensatory and life-long goals, the field overlaps with other fields and with the services provided by other disciplines.

Likewise, special education is not restricted to schools or to school-aged children.

A third feature of special education is that it is an applied discipline. Special education is concerned with the provision of a type of educational service, not with knowledge about exceptional children per se. Special educators and university staff involved in their training are intimately involved with educational institutions and the goals which they serve. The knowledge seen as useful to special educators is thus organized around those institutional goals, rather than around natural objects of knowledge. Knowledge is action oriented, not theoretically oriented. Shulman (1981) describes education as a field, rather than a discipline. This is certainly true for special education and has profound implications for the conduct of research in the field.

As an applied field, special education has been concerned in recent years with a number of important issues. One issue is the change from a medical to an educational definition of exceptional children. Or perhaps it is more accurate to say that special education has been developing a view of its client groups that is specifically educational, leaving the traditional, more medically oriented definitions to serve medical and health purposes.

David Kendall (1980) describes two sets of definitional categories. One set has a clear relationship to physical deviations, for example, trainable mentally retarded, hearing impaired, visually impaired, orthopaedically handicapped, and children with chronic health problems. Historically, these are medical categories which describe medical syndromes. These were the children first recognized as requiring special assistance, and were the first clients of special education.

The second set of categories has a less clear relationship to physical causality. It includes educationally mentally retarded, gifted, emotionally disturbed, socially maladjusted, speech impaired, learning disabled. These categories were recognized and derived within social and educational, not medical, contexts. This is especially true for the last category, the learning disabled. This is a category which is essentially

meaningless outside of school or situations requiring educational skills. Although the search continues for neurological correlates of the disorder - and some lines of research are promising - others continue to argue that the disorder is a specific educational problem having to do with a mismatch between the cognitive style of the child and teaching strategies used (Vellutino et al., 1977).

Social factors are also recognized as being heavily involved in this second set of categories. Chambers (1980) discusses the awareness that developed in the 1950's of the social causes of retardation, especially cultural deprivation and minority or native status.

Kendall views even these latter categories as educationally inadequate. Although they do identify children in more educationally relevant terms, they still describe general syndromes of behaviour. A set of truly educational categories, according to Kendall, would define service needs of children. Some service need categories coincide with medical categories - for example, mobility training is required for visually impaired children only. However, a service need, such as an augmentative communication system, is applicable to some mentally retarded, to hearing-impaired, visually impaired, orthopaedically handicapped and language-delayed individuals.

Keeton (1980) describes a model assessment process which moves in the direction suggested by Kendall. In her model the assessment team gathers information on the child, including his or her history and environment, not for the purpose of assigning a label, but in order to develop a specific educational plan. The assessment team involved in developing the plan is interdisciplinary and draws on the expertise of teachers, psychologists, social workers and medical personnel. This plan itself constitutes a hypothesis about the nature of the child's difficulties, which is verified and/or modified by the results of continuing evaluation as it is implemented.

Keeton's model provides only a general outline of how an educationally oriented assessment system would be structured. Special education as a field has not yet developed a well-defined alternative to the medical model. However, it is attempting to move in this direction. And it is possible to see how

special education is developing as a field of knowledge that is truly educational as opposed to medical or psychological, etc. We can also begin to understand special-education research as the development of knowledge which relates to the provision of educational services to exceptional children. This is in contrast to research activities which are concerned with knowledge about exceptional children per se or about their environment, knowledge which is primarily of interest within one of the academic disciplines upon which special education draws. It is also differentiated from research which is concerned with the provision of other kinds of services.

A second current issue in special education is that of mainstreaming and mandatory provision of services. Historically, exceptional children have been served outside of the educational system (Chambers, 1980). Even as the educational system began to make provision for such children, they were educated in separate schools or separate classes within schools. A combination of educational, philosophical and political events conjoined to spark the mainstreaming movement, which is the attempt to maintain children in regular settings to as great an extent as possible. The current model for special education provides for a cascade of services, which range from the provision of limited services to a child within a regular class, to the complete separation of a child within a total institution (Kirk and Gallagher, 1978: p. 19).

This development has furthered the change from medical to educational definitions of exceptionality since integration first focused on one of those groups which Kendall describes as having no clear physical etiology - the educationally mentally retarded (see Dunn, 1968). Learning-disabled children are also frequently served within a mainstreamed setting, as are children with language disorders.

A related issue is that of mandatory special education. This issue has received most attention from the enactment of Public Law 94-142 in the United States, which required school boards receiving federal aid to provide for all children within their jurisdictions. Currently, only four provinces in

Canada have equivalent legislation. But special education in Canada appears to have adopted the same philosophy, if not the same type of legislative support (Kendall, 1980). There are no statistics, but Kendall (1980) and Whyte (1980) agree that the vast increase in the numbers of children receiving special education is mainly due to the provisions now being made for children with mild handicaps who were previously not receiving any type of special help. Many of these children are now receiving special services within the regular class or on a withdrawal basis. Thus the increase in the number of exceptional children who are mainstreamed is largely due to the rise of this group rather than to the return of more severely handicapped children from segregated settings or to the inclusion of children who were previously excluded from schools.

These three advances within the field - a change to educationally oriented assessment strategies, mainstreaming, mandatory special education - have combined to increase the number of children seen as in need of special education and the number served within the regular school setting. This has led to blurring the distinction between special and regular education. Just as there are no clear boundaries between special education and other helping professions, the special educator does not stand clearly differentiated from the regular classroom teacher.

WHAT KINDS OF RESEARCH ARE UNDERTAKEN IN SPECIAL EDUCATION?

There are many ways to describe research in any field. Two dimensions that seem especially relevant to special education research are (1) the purpose of the research, and (2) the domain of inquiry.

In terms of purpose, research can be divided into that which is concerned mainly with inquiry - the generation of knowledge relevant to the provision of special education services - and that which is concerned with the development of services themselves or the technology related to those services. The literature contains a continual debate as to whether there

is a valid distinction between research (inquiry) and development.[1] Without entering into that debate, the position taken here is that, since special education is an applied field, the two constitute a continuum and, as will be argued later, should be interdependent. In terms of domain, research can be divided into that which is primarily concerned with the learners, teachers, programmes, or educational systems.

Figure 1 illustrates how these two dimensions interact to produce eight different areas of research activity. Investigations into learner and teacher behaviour tend to draw most heavily on core disciplines in the social and natural sciences. Research into instructional variables and characteristics of educational systems draws on the technology of programme evaluation, educational administration and policy studies. The four areas of development use products of the four knowledge domains, but they also use a variety of technical activities to produce products and services for use. As will be argued later, in an ideal system experience gained in development should feed back into the other four areas.

Research can also be described in terms of its methods and procedures. Considerable space will be devoted in this section of the paper to looking at research from this perspective, since it is on these grounds that research is primarily evaluated for funding. As Shulman (1981) argues, disciplined inquiry is distinguished from other kinds of activity in terms of the orderliness of its procedures. In order to develop and document the types of research methodologies used in special education, a brief study was made of articles published in the 1980 volume of the journal of Exceptional Children. There are many journals relevant to special education, but this journal more than any other single publication represents the profession as a whole. Other journals focus on specific problem areas within special education, or are

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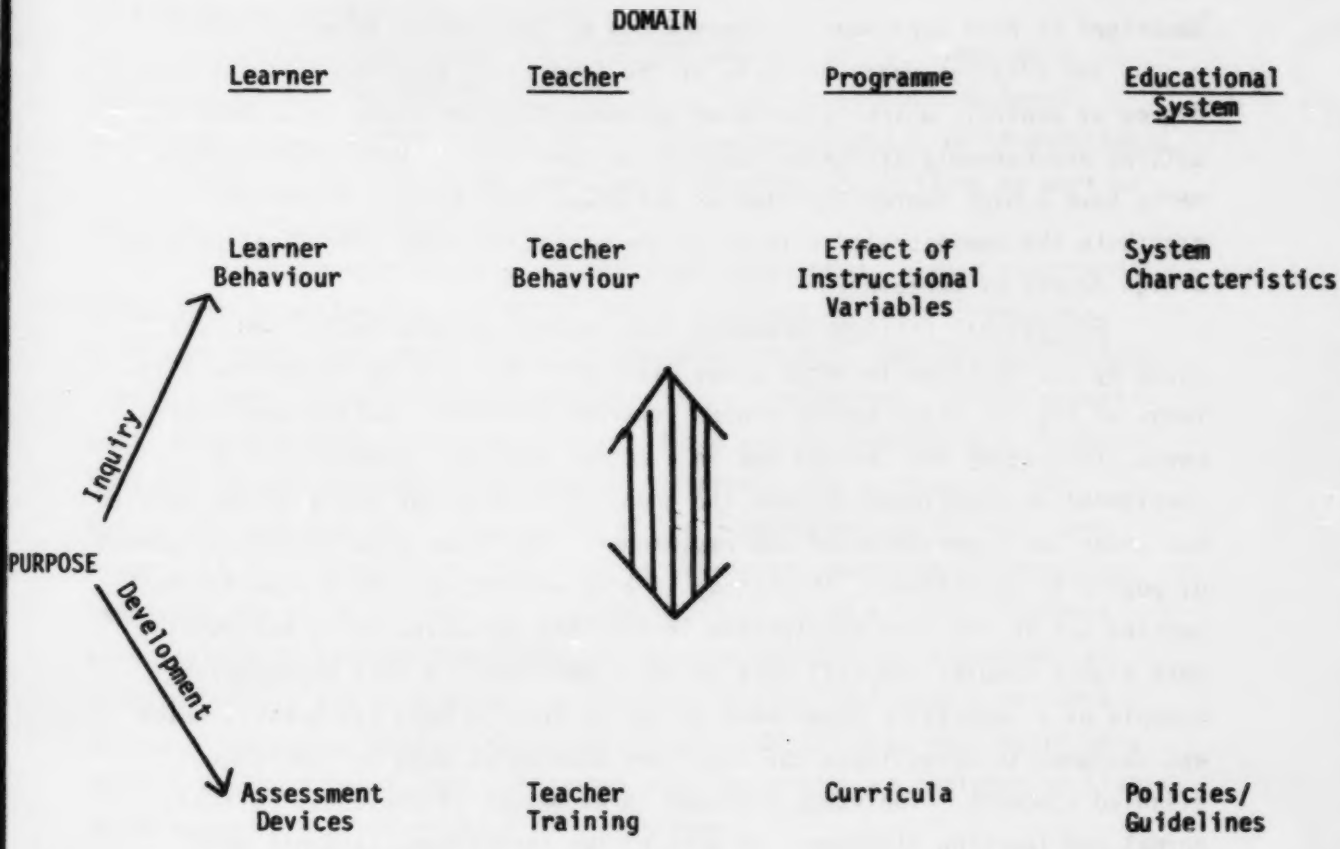
[1] The term inquiry is used in this paper instead of research, since to use the latter would beg the question as to what is legitimate research activity in special education.

Figure 1

Areas of Special-Education Research



primarily a vehicle for other disciplines which overlap with special education.

The 1980 volume of Exceptional Children produced seventy-one articles. They were assigned to six different methodological categories, described below: laboratory experiment, field experiment, field study, surveys, reviews, and scripts. The first four categories coincide with the four basic methods described by Fred Kerlinger in Foundations of Behavioural Research (1973).

The critical characteristic of the laboratory experiment is its high degree of control, which is achieved by conducting the study in a contrived setting and randomly assigning subjects to conditions. Laboratory experiments have a high degree of internal validity, that is, the researcher can attribute the demonstrated effects to the variables under investigation with a high degree of certainty.

Exceptional Children produced five studies of this type. One is a study by Jay Gottlieb in which group discussion was used to change the attitudes of regular class pupils toward retarded children. Unlike many experiments, this study was carried out in a school setting. However, it is considered an experiment because the group discussion was designed and carried out under the supervision of the researcher. There was also random assignment of pupils to conditions. This study is also unlike laboratory experiments carried out in the core disciplines in that the variables being manipulated were highly complex and difficult to fully describe. A more prototypical example of a laboratory experiment is one by Bernice Wong (in press), which was designed to investigate the cognitive strategies used by learning-disabled students. The study included three groups of students: gifted, normal and learning disabled. In each of two conditions, students were first read a story. Children in the "Experience" conditions were then asked to recall the story by writing it out on a sheet of paper. The "No-experience" group did not have this exercise. All groups were then given a pile of cards, each of which contained one idea unit from the story. Children were asked to select the twelve cards that they would like to have as retrieval cues if they had to remember the story. The behaviour of the

children was scored to reflect its degree of Organization/Planfulness, Exhaustiveness of search and presence of Checking Behaviour. The scores of the three groups in the two conditions were analyzed to determine the extent to which the learning disabled children used effective cognitive strategies in carrying out the task.

Laboratory experiments are directed toward inquiry. They most typically address learner characteristics or effects of instructional variables. Some involve aspects of curriculum development, as in Gottlieb's study (1980), where a film was produced to be shown to children as part of the experimental manipulation.

The second type of study is the field experiment. Field experiments, although they manipulate variables, are carried out in natural settings. Kerlinger feels that their essential characteristic is the lessened control over the independent variables and over subject selection. (Field experiments rarely achieve random assignment of subject to conditions.) Laboratory and field experiments can also be differentiated in terms of the complexity and degree of elaboration of the independent variables. One example of such research is the study by Leyser and Gottlieb (1980) on improving the social status of rejected pupils. In this study, teachers were trained in various techniques designed to improve the acceptance of rejected pupils and were given instructions in their use over a ten-week period. The social status of previously rejected children was tested on a pretest-posttest basis, and contrasted with the status of children in classes whose teachers did not receive this programme.

As is characteristic of field experiments, this study has a somewhat lower degree of internal validity than laboratory experiments since it was conducted under conditions more closely approximating normal service delivery. The programme was long and complex, consisting as it did of a constellation of components implemented by researchers and classroom teachers over a fairly long period of time. However, the experiment scores high on criteria of external validity, that is, the researchers could generalize with a high degree of confidence that a similar programme could be implemented again to

produce the same results in similar situations.

Field experiments play an important role because they typically combine curriculum development with inquiry into the effects of instructional variables. However, because of the complex variables being investigated, the implications of such studies for the development of theory are generally not straightforward.

Field experiments and laboratory experiments in education are not easy to distinguish. The Gottlieb study (1980), which was classified as a laboratory experiment, might be considered a field experiment. The two types really define a continuum of experimentation along which control over a situation is gradually lessened. Each is useful for different types of questions or at different stages in a programme of inquiry and development.

The third type of methodology is the field study, which, according to Kerlinger (1973), is the investigation of naturally occurring phenomenon without intervention or experimental manipulation. A number of different methodologies are appropriate to field studies. The most usual is some kind of formal observation technique - category system, rating scale - combined with statistical analysis of the resulting data. An example of such a study is Guralnick's (1980) investigation of social interaction among handicapped and non-handicapped children in a preschool classroom.

Field studies have inquiry as their primarly goal. But because they occur in the field, internal validity may be low. Thus, Guralnick's (1980) findings, concerning the factors affecting social interaction in young children, are specific to the particular context in which the observations occurred. The rate of interaction among handicapped and non-handicapped children may not be replicated in another setting with a different teacher, a different set of children, or a different programme structure. It is difficult for the researchers in a field study to determine what particular features of the setting may have constrained the behaviour that was observed. Thus, generalization is difficult.

There are two special categories of field studies which deserve

mention. One type consists of correlational studies which are designed to establish the reliability and validity of an assessment device. Such studies have a developmental goal. The second special category consists of those using qualitative data collection techniques, for example, participant observation and ethnography (Erickson, 1977). Such studies derive their methodology from anthropology rather than psychology or sociology, and are just now beginning to be accepted within education.

Qualitative techniques have great potential for contributing to research in special education, since they can begin to explore and identify variables which contribute to children's achievement. The complex interaction of learner characteristics and programme variables, which are so critically important to special education, may be more directly accessible to this methodology than to quantitative techniques. Qualitative research is particularly suited to the study of programme structure, in which it is important that variables be meaningful to the potential consumers of the research, and for which few validated, quantitatively defined variables exist.

Exceptional Children (1980) produced fourteen field studies, none of which was ethnographic. An example of an ethnographic study in special education is the recently completed dissertation by Sylvia Santin (1981), which investigated the conversational interaction among teachers and children in classes for the mentally retarded.

The fourth methodology is the frequently used survey research method. While all four areas of inquiry are amenable to study using questionnaires and interviews, such techniques seem to be most frequently used to study teacher and system characteristics. Exceptional Children produced nineteen such studies, most of which concerned the implementation of specific policies within educational systems, for example, definitions of IQ used by agencies, certification requirements for special education teachers and minimum competency procedures in use.

The remaining two categories - reviews and scripts - are not described

by Kerlinger, and, in fact, are not frequently considered research activities. However, they are important facets of the creative work of individuals within special education, including university faculty.

Review articles are secondary source documents which draw on original research. Twenty-two of the seventy-one studies in Exceptional Children were of this type. Review articles are thus very important within the professional literature in special education. Some review articles summarize, integrate and critique previous original research, and thus contribute to the knowledge base of the field. Reviews of this type can relate to any of the four domains of knowledge. An example is Donaldson's review of research on changing attitudes toward handicapped persons.

Many reviews are prepared for practicing educators and are thus efforts to disseminate rather than to produce information. An example is Almanza and Mosley's (1980) review of curriculum adaptations for culturally different children. Such reviews are more properly seen as developmental activities in the area of teacher training.

Script development describes a variety of technical activities, the most common within education being the writing of curricula. This consists of the selection of instructional goals, the identification of learning sequences, the development of instructional strategies, and the preparation of learning materials or teaching protocols. Another important type of script development is test construction, which includes definition of the behavioural domain to be tested and development of items or situations in which behaviour will be sampled. Seven of the studies included in the 1980 volume of Exceptional Children fell into this category. All were reports of curriculum development; none reported on the development of new tests.

Another type of activity under this category is the development of policies, guidelines and staff relationships within an educational system. These may or may not include written guidelines.

Such activities are not typically funded by research-granting agencies. Most curriculum development is carried out by teachers or consultants in the course of their duties. Textbooks and other resource materials are usually

developed by single individuals or groups under contract to publishing firms. Policy development is accomplished by administrators employed by the jurisdiction or institution concerned.

Scripts draw on the art of the practitioner. However, they need be no less thoughtful and systematic than any other type of creative activity. The written description of these products for dissemination within the profession represents an important contribution to the field. An example is the article in Exceptional Children by DeLucchi, Malone and Thier, describing science activities for visually impaired individuals, and Nash, Borman and Colson's article describing a career education programme for gifted children. Some of the articles included in this category describe programmes, rather than curricula in the narrow sense. An example is Thomason and Arkall's description of a mainstreaming programme for retarded children. Another is Grise's description of Florida's minimum-competency programme.

Such descriptions are particularly useful if they systematically derive the programme from existing theory or relate it to existing practices. This is often not the case. An exception is Daniel Ling's book on teaching speech to hearing-impaired children (Ling, 1976), which provides a fairly comprehensive rationale for the instructional programme that is presented.

In practice, no single research study uses only one research method. For example, studies whose goal is inquiry into learner characteristics, while using a laboratory or field experiment as the primary methodology, will need to engage in some script development in the production of experimental materials or protocols. Once developed, such procedures are sometimes later elaborated into educational programmes.

Likewise, a researcher whose goal is the development of a curriculum package will primarily use script development, but will likely also engage in some informal field studies in order to pilot test the materials.

The studies cited here as representing the various research methodologies were chosen on the basis of their predominant activity.

It is frequently the case in any investigation that supplementary

activities are not done systematically. The researcher trained in experimental methods may produce experimental materials (scripts) which are poorly developed and which do not adequately represent the independent variables under study. Likewise, the curriculum writer has likely not received formal training in field methods, and is thus not systematic in the pilot studies (s)he conducts.

This section has described research in special education from two perspectives: substantive areas and research methodologies. However, in terms of the development of special education as an applied field, it is more productive to view studies from neither of these perspectives, but from the perspective of the issue which they address. It will be argued later that SSHRC should be encouraging programmatic research which is addressed to critical issues in the field. Such research will be characterized by an interplay between inquiry and development. Research staff will represent different core disciplines, and each research area that needs to be investigated as part of the study of the issue will receive appropriate emphasis and be carried out with the required degree of methodological sophistication.

WHAT RESOURCES ARE CURRENTLY AVAILABLE TO SUPPORT RESEARCH IN SPECIAL EDUCATION?

There is currently little support for special education research in Canada. There are, first of all, relatively few trained individuals who are in positions which encourage formal research activity. Secondly, the funding pattern is unclear, fragmented and characterized by jurisdictional problems.

Research Personnel

Canada has few individuals who have a major interest in special

education research. This is primarily because special education, as an applied discipline, attracts professionals whose primary interest is the direct provision of service.

The 1980 directory of the Canadian Society for the Study of Education includes only twenty-nine individuals (out of a membership of approximately fourteen hundred) who describe themselves as having a research interest in special education. Only eighteen of these have doctorates and are employed in a university.

Another indicator of the lack of research manpower is the scarcity of graduate-level training in special education. Only three universities in Canada offer a doctorate in special education per se: the University of British Columbia, the University of Saskatchewan, and the University of Toronto (OISE). Several universities have other kinds of programmes which would support research in special education. The University of Alberta offers a doctorate in educational psychology with a special education concentration. McGill offers a doctorate in educational psychology, and doctoral research related to special education is conducted in conjunction with the rehabilitation programme, which is within the faculty of medicine. Doctoral students in education at the universities of Calgary and Ottawa can find support for a special education focus from faculty involved in the undergraduate special education programme at those universities. The University of Moncton has a Master of Arts programme in special education. Thus, there are only eight universities in which there is any expectation of finding a highly developed, continuing interest in special-education research.

This is not to say that staff in other faculties do not conduct such research. As a study of grants awarded by various agencies show, studies related to special education are conducted by speech pathologists, medical professionals, psychologists and social workers. For example, of the sixty-four grants awarded by SSHRC for 1979-80 to psychology and educational psychology, three related to special education, for a total of $45,079 out of the $930,505 awarded (4.8 percent). This compares not too unfavourably with the four out of eleven awards in education that went to special education, for $12,514 out of a total of $126,683 granted (9.8 percent). But studies conducted within allied fields will be informed by the primary

needs of those fields and cannot be seen as compensating for a strong research thrust within special education itself.

Faculties of education are another obvious source of research personnel. And if research is considered in the broad sense that it has been in this paper, staff members from faculties of education are involved in research. However, most of this research consists of informal developmental work which is unfunded, textbook writing and test development for private publishers, or review articles which are oriented toward a professional rather than a scholarly audience. Faculty may also carry out developmental activities as part of teacher training and/or graduate programmes using students enrolled in practica or research courses as research staff.

It is also important to note that the vast majority of creative activity in the profession is conducted by teachers, administrators and other professionals who are employed by boards of education and other service agencies.

The creative activities of staff in faculties of education and educators employed by institutions are frequently not considered to constitute research because they concentrate on development rather than inquiry, and because their work is frequently constrained by market or institutional needs rather than the needs of special education as a profession.

However, in terms of the field as a whole and when considering research in the field as a whole, such activities must not be discounted. Rather, they must be considered as part of the total body of creative activity within the field, and the question of their proper relationship to activities of a more formal, scholarly nature must be specifically addressed.

Funding Sources

A welter of agencies are currently involved in funding special

education research. Special education, as a subfield of education, is ostensibly supported by SSHRC. However, as has been seen, few proposals have been granted in this area. One reason is that proposals submitted to SSHRC in the area of special education are often redirected to other granting agencies, especially those related to health.

Although primarily concerned with health, the Department of National Health and Welfare specifically mentions the concerns of special populations and issues related to the rehabilitation of the disabled as "likely to be an ongoing interest" to the grants programme (The National Health Research and Development Program, 1981: p. 1)

The National Sciences and Engineering Research Council (NSERC) supports research in fields related to special education (e.g., kinesiology and psychology) as well as interdisciplinary research which might involve special education. It defines its interest in psychology as relating to "perception, learning, motivation, thinking, neural mechanisms underlying these processes and their development within the individual." These concerns relate to a number of special education issues, most notably the identification, diagnosis and treatment of learning disabilities. The interest of NSERC in action research also lends itself to special education proposals (see Awards Guide, 1981-82: pp. 9-10).

The Medical Research Council (MRC) supports some special education research because of its emphasis on applied research and its concern with "normal and abnormal psychological processes with clear and direct relevance to human health" (Grants and Awards Guide, 1979: p. 10). In 1979-80, there were six grants to psychology which were related to special education, for a total of $90,124.

The Social Service Program Branch is likewise supportive of action research projects which concern the handicapped.

Is this a problem? Cannot special educators also seek funding from these agencies? Some, in fact, do so. However, these agencies, although concerned with special populations, are not specifically concerned with education. Proposals from special education will be evaluated with reference

to the primary purpose of those agencies, which is health or research in the natural sciences; evaluators will not necessarily be individuals who are familiar with educational issues.

As has been discussed earlier, special education is not restricted to schools, and many aspects of special education are appropriately as well as historically the concern of the allied professions. However, this does not abrogate the need to develop a strong research capability within special education itself. Currently, it would appear that research oriented toward inquiry is fundable by SSHRC, but research oriented toward development is more likely fundable by other agencies. To differentially fund research activities in this way is not to foster the unified development of a field which is applied in its very nature. It also splits part of special education from general education, which is its proper home.

A number of Canadian foundations also fund research in special education, most notably the Samuel and Saidye Bronfman Family Foundation, the Atkinson Charitable Foundation, the Ontario Mental Health Foundation, the Vancouver Foundation and the Con Smythe Foundation for Crippled Children. However, foundations represent a scattered source of funding, and tend to prefer demonstration projects or equipment grants rather than systematic investigation of educational issues.

Seven of the Provinces - Prince Edward Island, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia - fund special education research within their jurisdictions. This is an important source of funding, since it allows research activities to be closely coordinated with educational issues of provincial concern and with the development of specific educational policies, which is a provincial matter. However, the experience of researchers in special education is that provincial funding tends to be short term and oriented toward visible products. Systematic inquiry and the elaboration of a knowledge base are of less concern than the development of concrete materials or policies which have immediately applicability. Political realities also exert an influence on the research that is funded, and proposals must generally support the direction of developing policy.

Thus, provincial funding, while an important ally to the profession,

cannot substitute for a unified, nation-wide funding source that is responsive to the field as a whole.

SUBSTANTIVE ISSUES RELATED TO SSHRC FUNDING

Role of Theory in Special Education Research

Special education has been described in this paper as an applied field. SSHRC has as its goal the "development or systemization of knowledge in various fields" (Grants Program, 1980-81: p. 27). The guidelines go on to say that

> Proposals whose primary purpose is professional development, curriculum development or the preparation of materials for teaching purposes will be considered only if they have foreseeable theoretical importance. (p. 28)

It thus seems that SSHRC will fund inquiry, but not development. However, it will be argued that to make such a distinction is detrimental to the field. It will also be argued that the nature of knowledge in special education is such as to bring into question the validity of the term theoretical, at least as broadly applicable to knowledge in the field.

We will first consider the particular role of theory within special education and the type of knowledge which is useful to the field. It will be argued that knowledge in special education is not theoretical in the sense in which that term is generally used within the academic disciplines, but that there is, nevertheless, a need to develop a systematic body of knowledge related to the profession.

Special education, as an applied discipline, draws on knowledge and theories from a number of core disciplines. But special education itself is not an organized body of knowledge about a topic. It is an organized body of knowledge about a set of intervention strategies within education.

Some theories do exist within the field, but they have relevance to the field only insofar as they inform practice and have clear implications

for practice. For example, much work has been done on the role of auditory discrimination in learning to read and the possibility of training deviant functioning. This is a topic with clear theoretical implications for psychology and neurology. It is also a topic with direct relevance to the provision of special education services.

Research on mainstreaming is less clearly theoretical. It concerns the manner in which services are provided, and is based on a combination of psychological, sociological, administrative and political considerations. The variables under consideration are complex, difficult to isolate and drawn primarily from practice rather than from existing theory. Nevertheless, although it is not clear that we can speak about mainstreaming theory, it is important to have an organized body of knowledge about the provision of services.

It is also argued that many education issues, because of their complexity, are not conducive to the derivation of general principles because effects are context dependent. Ben David (1973) and Cronbach (1975) argue this point with regard to two core disciplines in the social sciences; their arguments have even greater validity for special education.

Ben David (1973) argues that theories within the social sciences cannot have a high degree of generality. Speaking particularly to sociologists, he says that it is impossible to explain any event solely from a knowledge of basic underlying processes. Any event, he says, becomes particularized by the specific context in which it occurs. However, sociologists, trying to follow the model of the natural sciences, attempt to develop theories of sociological phenomena that have the same degree of generality as theories about physical events. The results, says Ben David, "are usually trivial from the point of view of theory, and much too abstract to be useful in practice." Rather than attempting to develop general theories, he says that social scientists should devote their attention to explaining particular events, a goal which requires a different model of research (pp. 40-42).

In order to be applied, a body of knowledge must be coined in terms that are "functionally relevant" to educators (Erickson, 1977).

For this to occur, Erickson argues that constructs and variables must be derived from within the context in which they naturally occur, rather than from organized theories.

Schultz (1979) talks about the need to involve educators in the research process itself as a condition necessary for the product's being relevant to field needs. He argues against the traditional practice of researchers working in isolation and attempting to make materials "teacher-proof," rather than working with practicing educators to produce materials that are compatible with their ways of working. Krathwohl (1974) talks about the lack of effort that is devoted to the dissemination of research products.

Ben David (1973) goes further and talks about the need for there to be feedback from practice to research. Not only does research need to inform practice and be conducted in such a way as to maximize the chance that this occurs, but the reverse needs to occur as well. Research needs to arise out of the needs and perspective of practising educators.

Because of its reliance on traditional designs, Krathwohl argues that research in education has functioned mainly as a legitimizer of practice, not as an innovative activity. Rather, innovations arise from the art of the clinician and are adopted for intuitive, philosophical and political reasons. Research plays a role mainly in debunking previous practice and in setting the stage for change (e.g. the oral-manualism controversy in deaf education), or in legitimizing changes that have already taken place. Research is rarely involved in the development or elaboration of those changes per se. For example, there has been little research on how one best implements a total communication programme, on what sign language system should be used, how it should be introduced, and what training procedures are most effective in helping parents become competent in a manual system.

Thus the first recommendation arising out of the discussion is as follows:

> Rec. 1. SSHRC should remove the restriction on funding research whose "primary purpose is professional development, curriculum development or the preparation of materials for teaching purposes...."

The role and nature of theory in special education has profound methodological implications. Core disciplines in the social sciences value the experiment as a methodological model and this is appropriate for theory building. Campbell and Stanley (1966) discuss the use of quasi-experimental designs in educational research, but such studies are usually evaluated with reference to the "true experiment" and judged inferior (Philipps, 1980). As is apparent from the discussion of the types of studies actually carried out in special education, the degree of control and sampling precision that the true experiment requires is often impossible.

The experiment, with its goal of theory building, is primarily evaluated with reference to its internal validity, that is, the degree of certainty with which the researcher can conclude that the effects observed are attributable to the variables that were manipulated. This certainty depends on the degree of control exerted upon the experimental manipulation and the assignment of subjects to conditions. However, research which is oriented toward practice is better evaluated with reference to its external validity, that is, the degree of certainty with which the researcher will be able to conclude that the action undertaken will have the same effects when repeated in other settings. This certainty depends on the extent to which the setting studied mirrors settings and conditions in the real world, and the extent to which those conditions are fully, rather than precisely, described.

In order to maximize external validity, research must be carried out in the field under conditions which are as natural as possible. Erickson (1977) discusses the importance of ethnography in research in schools. Cronbach (1975), in discussing research issues in psychology, argues for "thick descriptions". By this he means that the researcher should go beyond his formal measures to collect informal protocols of what occurred, so that he can "look within his data for local effects arising from uncontrolled conditions and intermediate responses."

Criteria for Research in Special Education

What then are the criteria by which proposals in special education should be evaluated? This paper does not take the position that theory building is unimportant in special education, or that quasi-experimental methods are to be preferred. Rather the position taken is that a range of research questions should be addressed, and that each one should be investigated using the method that is most appropriate to the domain of inquiry and the goal of the research. Thus this paper seeks to broaden the spectrum of research studies which are seen as legitimate activities for funding.

In order to evaluate a comprehensive spectrum of research activities in special education, three sets of criteria are required: internal validity, external validity and applicability.

Internal Validity. Researchers in special education feel that proposals submitted to SSHRC are primarily evaluated with respect to criteria of internal validity, criteria that are most applicable to the laboratory experiment. These criteria are important for studies of this type, but should not have priority over other criteria.

External Validity. Criteria related to external validity should be considered equally important. One component of external validity concerns the existence of a treatment. In a laboratory experiment, the existence of a treatment is readily identifiable because it is under the control of the researcher. However, in field experiments and field studies, a treatment and its character are often assumed to exist - on the basis of informal descriptions of a programme - rather than being demonstrated to exist. For example, studies of mainstreaming have rarely described the extent to which integrated pupils actually interact with regular classmates. Unless this is done, it is meaningless to ascribe lack of social development to failure of the integration experience (see Leonard and Lowry, 1979).

A second component of external validity is ecological validity. Studies are to be preferred if they can demonstrate that the treatment they are investigating can be implemented in a natural setting. Some aspects of

ecological validity can be judged on an intuitive basis by anyone familiar with schools and the way in which they operate. However, the most effective demonstration of ecological validity is to actually implement a treatment in the field.

Because of the context dependency of effects in education, ecological validity can only be assured by replication. Studies which are replications are generally not recognized as making a unique contribution to knowledge. However, in the social sciences in general, and in special education in particular, replication is important because the observed findings depend, in part, on the particular setting and the particular learners who are involved.

A third component of external validity is referent generality. This refers to the range of behaviours over which the effect can be generalized. One obvious way to increase referent generality is to conduct longitudinal studies: findings are more important which have long-term consequences. However, findings are also more important which refer to distal as opposed to merely proximal behaviours. For example, a reading programme is more effective if the increase in pupil's reading skill is shown to generalize to other types of reading materials, fosters improved attitudes toward reading, and increased amounts of voluntary reading behaviour. Thus, studies should be concerned with the spread of effects throughout the domain under investigation.

Applicability. Criteria of applicability could be subsumed under external validity, but I separate them out here because of their critical importance and historical lack of recognition. Studies are preferred which have demonstrated their functional relevance to practising educators, and which have included a degree of technological development, that is, tests, curricula, guidelines, policies etc., which can support their dissemination in the field. Some ways of insuring and demonstrating applicability are to involve educators as co-investigators in the development and design of research, to include materials production as part of the research enterprise, and to have a formal dissemination component.

No single proposal will rate high on all criteria. In fact, criteria of internal and external validity are, to some extent, mutually exclusive. Thus, the following recommendations are made:

Rec. 2. Three sets of criteria should be applied to the evaluation of any research proposal: internal validity, external validity and applicability. While recognizing that no proposal will rate high on all criteria, all criteria should be equally valued.

Rec. 3. Research studies which represent replications of previous research should be recognized as contributing to the systematic development of knowledge.

Supporting Programmatic Research

Because it is an applied discipline, systematic development of special education requires a coordinated body of effort involving people who are primarily practitioners as well as researchers, and who use a variety of methodologies. Knowledge about an exceptional individual is incomplete unless there is also knowledge of how to meet his/her need and of the technology available to deliver the required service. Likewise, service is likely to be inadequate if it is not derived from a systematic conceptual system and not part of a systematic delivery system within which its appropriateness for the individual can be evaluated.

Developmental activities within special education are now primarily carried out by educators and other professionals employed by service agencies and by researchers supported by grants from other federal agencies, provincial governments and private foundations. However, SSHRC is the only agency with responsibility for the systematic development of knowledge in the field of special education as a whole.

This responsibility is currently being met by funding research proposals which are clearly addressed to theoretical issues in the field. It can be met more comprehensively by funding proposals which address applied issues in a systematic way and which combine inquiry with development. Developmental

activities should be fundable if they are coordinated with inquiry, either as part of the same study or as one study in a series of studies. This is what Ben David (1973) describes as an "eclectic engineering model." Similarly Schultz speaks about cultivating research which represents "interactive operations over time rather than discrete, single-event enterprises" (1979).

Another way in which this responsibility can be met is by funding inquiry-oriented research which is coordinated with developmental activities funded by other agencies. For example, a curriculum development activity which is funded by a provincial or private agency or carried out by a board of education might have an evaluation component funded by SSHRC. Or SSHRC might fund the writing of a review which presents the knowledge base from which a programme has been derived.

Still another way is to fund the dissemination of research products, such as detailed descriptions of educational programmes and practices or support materials for educators wishing to implement new programmes.

The following recommendations address these concerns:

Rec. 4. SSHRC should give priority to research proposals which are part of a programmatic body of research, which as a programme, satisfies criteria of internal validity, external validity and applicability.

Rec. 5. SSHRC should fund programmatic research which is conducted by teams of researchers which include practising educators as well as researchers.

Rec. 6. Dissemination activities should be fundable, either as part of a specific research study, or as an adjunct to developmental activities which are supported by other agencies.

Federal-Provincial Responsibilities

A special issue which derives from the applied nature of research in special education is the appropriate spheres of federal and provincial agencies in conducting research. With education specifically designated as a provincial

responsibility, SSHRC has decidedly dissociated itself from funding the direct provision of service. Yet much developmental research necessarily involves service delivery. Based on the view presented in this paper, to refuse to fund developmental activities in special education is to refuse to fund special education research.

In addition, it can be argued that federal agencies have a legitimate role in the solution of special education problems because small populations are involved and a series of provincially based research programmes cannot marshall the required resources. This is especially the case for some specific disabilities which have a low incidence, for example, deafness and blindness. However, other disabilities, although less rare, still constitute relatively small subsets of the population.

There are also some special education issues which are of national concern. One is the issue of native education, which is a federal responsibility. Another is the issue of mainstreaming, which is national in the sense that it represents the developing philosophy of agencies across the nation.

Existing provincial funding for special education research does not now meet the needs of the field. As discussed in a previous section, provinces tend to fund short-term projects which are congruent with established policy and which are evaluated by their ability to produce usable results rather than their scientific integrity. The level of provincial funding also varies from province to province. Finally, there are agencies such as the Canadian Association for Mental Retardation, which are not part of the educational system, but which provide special education services organized on a national level.

If applied research is funded which is part of a systematic programme of inquiry and development, and in which there are systematic efforts to involve and disseminate the results to practitioners, the issue of federal encroachment on provincial responsibilities is a moot point. Research only occurs in schools if those institutions agree to participate. Practitioners will only become involved in research if it is relevant to the goals which

have been established for their programmes.

Establishing substantive priorities for research

Special education is a wide-ranging field, and researchers across Canada are involved in investigating a variety of problem areas. SSHRC should continue to offer support to individual researchers and groups of researchers seeking support for proposals which arise out of their own milieu or academic/professional background. However, it would also be helpful for SSHRC to establish priority areas for research in special education and to solicit proposals which can be coordinated into a programmatic research effort.

Such proposals should represent the type of issue-oriented research outlined in this paper. They should be programmatic and should combine inquiry and developmentally oriented activities into a concerted attack on a specific problem area in such a way that significant changes will occur in both the knowledge base and the practice of special education.

Recommending specific priority areas is not the goal of this paper; however, a number of suggestions can be made:

1. Mainstreaming. The importance of mainstreaming as an issue in special education has already been discussed. Most research on this topic has addressed the issue at a general level: Do mainstreamed children make greater educational progress than children who are in segregated placement? The results have been such as to encourage the growth of this type of delivery system. However, research also indicates that integrated placements are not always to be preferred. The OECD External Examiners' Report on Educational Policies in Canada (1975) noted that

> Most school administrators do not seem to be aware of the extent to which very large infusions of resources are needed within the schools for the

> proper treatment of handicapped children. In part, without such resources, retaining handicapped children in regular schools will most likely produce severe difficulties for the children.... (p. 54)

Indeed there has been little research directed at the questions of what type of children can be mainstreamed, what types of services they require, and what types of teacher training, consultative and other services are needed in order for the regular class teacher to meet the needs of the exceptional child. These questions could perhaps best be attacked by establishing several research programmes surrounding different and comprehensive model service programmes.

2. Learning Disabilities at the Secondary and Post-Secondary Level. The problems of learning disabled children at the secondary level have only begun to be recognized in recent years. As yet, schools have committed few resources to meet the needs of older children and adults who have specific problems in mastering academic skills. The particular problem of learning disabilities in prison populations is only beginning to be recognized. A number of approaches for remediating the difficulties of such individuals already exist, for example, remedial reading and cognitive modifiability. However, they have not been adequately researched, and there are few materials suitable for this population.
3. Native Education. The educational problems of native peoples are well known. The Government of Canada Report (1975) says that "Every Inuit or Indian child in school in the north represents in some measure an achievement over difficulties of climate, distance and language." The problems of low-retention rate and non-supportive home environments are also recognized in the OECD report, which says that there have been few efforts to adapt the educational system to the special needs of native peoples, and that there is a lack of appropriate curricula, native teachers and native participation in administering the

schools (p. 56). This is an area in which carefully planned, continuing developmental efforts are required. Research needs to involve native peoples themselves in the design, management and evaluation of programmes. Focal research questions concern the nature of native participation, the character of programmes developed, how they balance native/majority culture features and what the programme outcomes are.

4. Early Education. As has been mentioned, there is a clear trend toward earlier identification and provision of service for handicapped children. There is little research into the best means of establishing early intervention. What are the respective roles of the schools, of hospitals or of nursery schools and child-care agencies? How can the educational and social needs of young handicapped children be balanced? To what extent and under what conditions can parents be involved as teachers of their children? These issues involve both basic questions concerning the development of young children, their interaction with their parents and the effect of various instructional strategies. Other questions concern the mechanisms of service delivery, especially among geographically dispersed groups and problem families.

Rec. 7. SSHRC should identify one or more priority areas for research in special education and should seek to fund programmatic series of investigations in those areas.

Rec. 8. Suggested priority areas for SSHRC funding are mainstreaming, learning disabilities at the secondary and post-secondary level, native education and early intervention.

OPERATIONAL AND PROCEDURAL ISSUES RELATED TO SSHRC FUNDING

Characteristics of the Assessors

Researchers in special education feel that proposals are too often

evaluated by individuals in the core disciplines who give too much weight to criteria of internal validity and theoretical importance, and are unable to appreciate criteria related to external validity and applicability, or that evaluations which address internal validity have more impact on the final funding decision. Thus, it is important that proposals be assessed by individuals with a background in special education and that educators be represented on the Adjudication Committee and Academic Panel.

Rec. 9. Assessors for special education proposals should be drawn primarily from among individuals with a background in special education.

Rec. 10. Individuals with a background in education should be represented on the Adjudication Committee and the Academic Panel.

Funding Proposal Development

Programmatic research of the type advocated in this paper requires the coordinated efforts of practitioners and researchers. This, in turn, depends on the existence of cooperative relationships which do not currently exist on a large scale. Researchers who wish to develop such relationships and practitioners who wish to participate in such enterprises require support in order to develop the necessary relationships and work on proposals which address educational issues in a comprehensive way.

Merely enlisting the support of practitioners for activities entirely carried out by researchers is enormously time consuming. The purpose of the study must be communicated in terms that make its relevance to current issues clear. The type of participation required of children, teachers and other staff must be discussed and legitimate adjustments made.

Time is an even more pressing problem if practitioners are to be involved in a meaningful way in the conduct of the research. Researchers and practitioners often speak a different language and considerable discussion may be needed in order to translate concepts and concerns into

a mutually understood frame of reference. Issues of concern to practitioners must be carefully explored so that they can be accurately operationalized. Conversely, methodological procedures developed by researchers must be presented and discussed to ensure that they are valid representations of the constructs under investigation.

These requirements need to be recognized by providing funding for proposal development, either as a separate grant prior to the submission of a formal proposal, or by allowing for a period of design elaboration in the initial stages of a study. It might be helpful to provide funds for a series of workshops on major issues (mainstreaming, native education, etc.), which would involve interested researchers and practitioners in developing proposal ideas for programmatic research.

While applied research places greater demands on the time of researchers than the typical study in the core disciplines, time constitutes a special problem for practitioners who do not have formal research responsibilities. It should be recognized that research time stipends may be frequently required for university faculty engaged in research with developmental components. The need should also be recognized to provide time stipends to practitioners involved in research without the four-month deductability requirement.

The following recommendations are designed to address these issues:

Rec. 11. SSHRC should provide funds to support proposal development, so that researchers and practitioners can work together to design programmatic research that incorporates inquiry with development.

Rec. 12. SSHRC should recognize the need for a greater amount of start-up time in applied research in order to enlist support and meaningfully involve practising educators. This may involve additional research staff and/or research-time stipends.

Rec. 13. Research-time stipends should be available to practising educators who are involved in research without the four-month deductability requirement.

Timing of Submission Deadlines

Currently a substantial number of special education proposals that are submitted to SSHRC are judged to be more suitable for other agencies. If the recommendations proposed in this paper are adopted, this problem should be ameliorated. Nevertheless, it is important that jurisdictional issues not impede a proposal's acceptance. Currently, when a proposal is returned for this reason, the researcher does not usually have sufficient time to revise the application in accordance with the new agency's guidelines and meet the new deadline. (S)he would currently only be able to do so if the original application to SSHRC were made well in advance of that agency's deadline.

A solution would be for a cooperative arrangement to be made among the relevant agencies so that a proposal resubmitted to another agency would be given an extended deadline.

Rec. 14. SSHRC should seek a cooperative agreement among all federal funding agencies that a proposal which is initially submitted to one agency, and then required to be resubmitted to another agency because of jurisdictional problems would receive an extended deadline for the second submission.

Level of Funding for Graduate Assistants

Most special educators, including those enrolled in doctoral training, are primarily oriented toward practice rather than research. The level of funding available to graduate assistants through SSHRC funding will only attract students who are already committed to a research career since they are not competitive with the funding available through assistantships in most universities. But special education needs to increase its research manpower and thus needs to increase the attractiveness of research positions to graduate students.

Rec. 15. Funding for graduate assistants who are involved in SSHRC-funded studies should be placed on a par with that available through the university's own graduate assistantship programme.

In addition, applied research presents particular problems to the involvement of graduate students. Research activities are not under the complete control of the researchers and must be scheduled when convenient to the school or institution. This may be difficult to coordinate with the student's own course schedule. In special education, there are particular problems involved in using graduate students, because special populations often require particular skills which graduate students may not possess, for example, sign language and mobility training.

Rec. 16. SSHRC needs to recognize that graduate assistants may not be as productive in special education as in other fields, without special training, and accept a higher level of funding requests.

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Chapter 12

TEACHER EDUCATION

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DESCRIPTION AND DEFINITION OF RESEARCH IN TEACHER EDUCATION

Scope and Nature of Teacher Education

Although research on teacher effectiveness is generally considered to constitute a domain separate from research on teacher education, the former is nonetheless fundamental to the latter. Establishing assumptions about what constitutes effective teaching is a prerequisite to teacher education. This entails both philosophical and practical issues concerning the role of the school and the role of the teacher in society generally and in a given community specifically. Teacher-effectiveness research entails empirical questions about the effectiveness of particular teaching behaviours for achieving particular objectives with particular groups of students.

Any measure of success in identifying the knowledge, skills and attitudes of effective teachers must be followed by attempts to determine whether and under what conditions student teachers and experienced teachers can

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develop the knowledge, skills and attitudes identified. Whereas the first cluster of questions contributes to establishing the ends of teacher education, this second cluster contributes to defining means for achieving those ends. Is it possible to identify preconditions which should be made criteria for entry to teacher education, for example, characteristics of personality or attitudes? How should curricula be developed and instruction designed for teacher education? In what context or contexts should teacher education take place? If the components of an effective programme can be more clearly identified, is it equally important to define appropriate sequences, and can one sequence be demonstrated to be more effective than another for achieving particular objectives?

Research in teacher education must take into account the school as the primary context of the teacher's professional career. The context becomes important in questions of the transfer of training. It is a powerful socializing agent whether the object of that socialization is a student teacher, intern or beginning teacher. The transaction of role relationships in a school setting is, therefore, at least as important as a focus of teacher-education research as any element in a formal pre-service teacher-education programme. Furthermore, teacher education includes within its domain questions about the professional as a learner and about the implementation of change in formal organizations such as schools. Thus teacher-education research addresses questions of professional development at various stages: pre-service, initial service and in-service. It also includes not only those structures and processes designed for teacher education, but those designed for the professional development of informal learning.

Also falling within the domain of teacher education research are questions of institutional culture and both intra- and inter-institutional politics. Questions of governance arise at every stage from goal setting and candidate selection to student teaching and credentialing. Consequently, research on policy, decision-making and change in teacher education touches on the roles of social and political institutions, universities, other institutions of higher education and professional associations.

This brief overview of the domain of teacher-education research demonstrates tremendous scope for systematic enquiry. Research approaches drawn from a variety of disciplines are necessary to the development of knowledge and insight in teacher education. Non-empirical critical/analytic methods of educational philosophers have been used to clarify issues and identify important questions. Historical research has been invaluable in dealing with the claims and counter-claims of those critics who tend to romanticize the practices of the past. Much of teacher-education research is based on more-or-less systematic observation and, at its best, reflects rigorous ethnographic methodology. The full range of quantitative techniques has been enlisted in support of teacher-education research although the field reflects greater reliance on survey research and correlational studies than on strictly experimental methodology.

General Trends in Teacher Education Research

The early decades of this century produced a variety of studies which set out to describe the characteristics that distinguished more effective teachers from less effective ones. Such studies produced lists of attributes perceived by students (or other expert judges) to characterize effective teachers. Lists of characteristics included such items as personal appearance, breadth of interests, considerateness, enthusiasm and leadership. None of the studies of that period adduced evidence that teachers manifesting these traits were more effective than others in stimulating student achievement. Hundreds of check lists and rating scales were developed for assessing student teachers, but all of the scales failed to focus on what the student teacher must be able to do to teach effectively.

The 1940's and 1950's produced a spate of studies designed to identify the personality and attitude correlates of perceived success in teaching Such research was, of course, more oriented to the selection of potentialy effective teachers than to their development. This type of research prouced relatively little of consequence. By 1960 the systematic observation of behaviour in the classroom was well established as a method for studying the nature of effective teaching. At its best, this approach sought rel-

tionships between stable patterns of teacher behaviour on the one hand and pupil achievement and attitudes on the other. In 1971 fifty such process-product studies were reviewed revealing identifiable patterns of behaviour which related to pupil learning, patterns which could presumably be developed by means of appropriately designed teacher-education programmes.

The last decade has seen the rise of competency- or performance-based teacher education, an approach which assumes that effectiveness requires a large repertoire of knowledge and skills and the ability to utilize them appropriately. Competency-based teacher education is by no means a universally accepted model, but its emphasis on what an effective teacher is able to do, rather than on what a teacher must be, has had a substantial impact.

The richness and complexity of classroom behaviour defies simple generalizations and teacher-education researchers are constantly reminded that it is not sufficient to identify particular teacher behaviours as effective unless they are also identified as effective for particular objectives with particular pupils. There is no danger that teacher-education research will lack for important questions in the foreseeable future.

Sample Topics in Teacher Education Research

The preceding summary of trends in teacher-education research reflects the points of contact with research on teacher effectiveness. It has been noted, however, that teacher education research encompasses a much broader range of topics. The following are merely examples:

Goals	Survey of goals of existing programmes as perceived by teacher educators, graduates, student teachers, trustees, teachers, etc. Delphi studies aimed at creating consensus among different constituencies.
Methods	Competency- or performance-based models. Modelling, simulation, microteaching, systematic observation, videotape self-analysis, computer-assisted instruction, teaching strategies designed for specific application (subject, level, type of pupil).

Selection	Characteristics of professionals and of applicants. Proficiencies: speech and communication skills. Cognitive skills. Personality characteristics, attitudes and motivation.
Placement	Supply and demand. Demographic patterns. Matching programme output to employment opportunities.
Practica	Laboratory and school settings. Length and sequence in programme. Concurrent or serial experiences. Clinical supervision. Role of professionals and of faculty. Matching teaching style with pupils, setting, level.
Programme Evaluation	Use of feedback. Management of change. Political uses of findings.
Governance	Respective roles of teacher-education experts, professional associations, employer groups, government agencies. Alternative approaches - institutional accreditation, programme approval, credentialing, etc.
Funding	Alternate approaches to the funding of professional education.
Research Methods	Analysis of the strengths, weaknesses and appropriate uses of ethnography, classroom observation, case studies, correlational studies (including survey research).

Specific Questions Being Addressed By Researchers in Teacher Education

1. How can we educate the proper number and kinds of teachers?
2. How should or can teacher education candidates be selected?
3. How should or can teacher education graduates be evaluated?
4. What knowledge and practical skills and techniques should be included in teacher-education programmes?
5. What is the place of apprenticeship in teacher education?
6. What are the roles of the profession, the government, and the University in teacher education?
7. How should teacher education be financed?
8. How are policy decisions made?

9. How is Canadian cultural pluralism recognized? How accessible are programmes for ethnic and cultural groups?

10. What is the desirable balance in programmes with respect to subject matter and practice, specialization and general preparation, specified role preparation, and uses of technology?

11. What are the effects of different types of teacher education programmes on teaching practice?

12. How can results of research on teaching best be incorporated in teacher education programmes?

13. How can a theory of teaching as practice be developed to account for instruction, learning, efficacy?

14. What assessment standards are appropriate for teacher education? What are the appropriate sources: epistemology? psychology? moral and political premises? efficacy?

A Classification of Research Domains in Teacher Education

The area of teacher education research can probably be best described by creating a matrix of research questions as they relate to individual roles or behaviour, to institutional roles, and to policy-making. A sample matrix is provided in Figure 1.

EXAMPLES OF CURRENT STUDIES IN TEACHER EDUCATION

Canadian Research in Teacher Education

The preceding classification of research domains enables one to identify many areas in which research could make important contributions to policy and practice. However, it is all too rare that the same variables are studied under comparable conditions, with comparable measures and adequate controls. This is due in part to the complexity of the phenomena studied but in greater part to the lack of coordination among researchers. The practicum or school experience has been researched as much and as carefully as any

Components of Teacher Education	Research with respect to					
	Students	Instructors	Professionals	Trustees	University	Government
Present outcome						
Preferred outcome						
Gaps between present and preferred						
Defining stages						
Diagnosing obstacles						
Searching for solutions						
Applying strategies						
Assessing programmes						

Figure 1. Classification of Research Domains in Teacher Education

aspect of teacher education. A review[1] of ten of the better Canadian studies on that subject reveals the complexity of teacher education research and identifies the difficulty of generalizing from one, or even several, studies. Nevertheless, it also demonstrates the potential value of careful review and coordination of research in this field.

Research aimed at determining the effects of the practicum experience on the student teacher has focused largely on measures of self-concept, motivation for teaching, professional attitudes, and the reduction of anxiety during student teaching. As in other areas of research on teacher education, no clear pattern of results can be identified, due to varying samples, the use of widely differing measures, and the inability of researchers to control treatment variables. Nevertheless, some generalizations about practicum effects seem to emerge from the studies reviewed in this area.

The first concerns the interaction of practicum length with specific programme variables such as the quality of support to student teachers. It appears that while length of practicum may be important, a longer practicum alone is insufficient to produce higher levels of motivation and self-concept or lower levels of anxiety among student teachers. Certain types of programmes may be more conducive to effecting such changes in desired directions, although in a short practicum the effects are unlikely to be apparent. It seems that the combination of specific programme characteristics with a longer practicum experience may be necessary for significant change to occur.

While this is not a definitive claim, it is supported by several clusters of studies conducted in two Canadian institutions. These studies are unique in that although they began as independent investigations, they have led to a comparative analysis (Covert and Clifton, 1981) of practicum effects in the two institutions, using data from the same instrument. The opportunity for such comparisons in teacher education is unusual. In the following discussion, research from each institution will be presented separately, followed by a summary of the comparative study.

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[1] The review which follows was prepared by Marvin Wideen and Patricia Holborn and is an excerpt from "A Review of Research on Teacher Education in Canada," in The Management of Change in Teacher Education, Vol. IV: a report for the Social Sciences and Humanities Research Council. The Bibliography of these ten studies is attached.

At Memorial University, Clifton and Covert have investigated changes in self-concept and development of professional dispositions among student teachers in several practicum situations (Clifton and Covert, 1977, 1979; Covert and Clifton, 1979). An early study (Clifton and Covert, 1977) suggested that students' self-concepts and professional attitudes were more positive at the conclusion of an experimental programme in which efforts had been made to balance theory and practice than in a regular programme which acted as a control. Both were short-term classroom experiences. However, a later study (1979) comparing students in two extended practicum situations with a control group having only two weeks of student teaching revealed no significant differences in self-concept, motivation or attitude to teaching as a result of the longer practicum. The researchers concluded that a number of factors within the practicum such as the discrepancy between students' ideals and the reality of teaching, the lack of legitimacy in a student-teacher's role, and the rituals of socialization into teaching may work against the goals of an extended practicum (Covert, 1979).

At Simon Fraser University, where student teachers spend one-third of their professional year (approximately twenty weeks) in the classroom, an attempt has been made to minimize these negative effects of the practicum situation (Allen, 1973; Gregory and Allen, 1978). Programme features considered to enhance the practicum experience include "an individually tailored, gradual introduction to full-time teaching; expert guidance and support from selected and trained teaching triad members; and a time span that is long enough to allow the development and adoption of appropriate teaching behaviours and an understanding of the realities of a classroom" (Tattersall, 1979, p. 151). While a variety of research and evaluative activities focusing on the practicum have been conducted at Simon Fraser University, only three of these which address attitudes, self-concept and anxiety will be reviewed here. All used the Elsworth-Coulter Semantic Differential (Coulter and Elsworth, 1977) and the Teaching Anxiety Scale (Parsons, 1973) as instruments in their investigations.

The first, by Gregory and Allen (1977), attempted to assess changes in student teacher self-concept and anxiety in three student-teaching situations: an initial campus-based practicum of six weeks; an off-campus student-

teaching experience which integrated classroom and coursework over a semester; and an extended practicum of thirteen weeks. In the initial on-campus situation measures were taken at the mid-point as well as at the beginning and end of the practicum, and revealed that while self-concept remained stable or improved from pre-test to post-test, there was some variability within the practicum. The researchers suggested that the overall positive outcomes were due to "the length of continuous teaching practice under conditions which provided a high level of support" (p. 63), and this was most evident in the extended practicum situation.

Similar results were obtained by Kaufman and Shapson (1977), using the same instruments and students from the same programme. They identified an overall tendency for both on-campus and off-campus students to either maintain or improve their scores on self-concept and attitude measures.

A third investigation by Tattersall (1979) sought to identify patterns of change in student teacher anxiety and self-concept over the course of the extended, or thirteen-week, practicum. Measures were taken at the beginning of the semester and again at three, six, nine and twelve weeks. The randomly selected groups (n=195) totalled sixty percent of the students in the professional development extended practicum at the time. While the results supported previous studies in terms of maintained or improved self-concept from pre-test to week twelve, they also revealed striking fluctuations within the practicum. For instance, anxiety declined during the early weeks from a high point at pre-test, but rose markedly at the mid-point when self-concept was lowest. Steady improvements occurred only during the latter half of the practicum. Tattersall concluded that

> It does seem clear that had the practicum ended after three weeks, the student teachers, as a group, would have left the classroom less anxious and therefore less likely to be suffering from "self-depreciating ruminations and ego-defensive avoidant responses" (Sinclair, 1971, p. 98), though with their ideal of personal orderliness more visionary. Unfortunately, their lowered teaching anxiety may have resulted in false feelings of security and achievement as they had not yet faced the challenges, traumas and attendant responsibilities and demands of full-time teaching. Results from this study suggest that it takes a minimum of approximately nine weeks for student-teachers in the Ed. 405 course to achieve what may be durable and desirable decrements in teaching anxiety, and twelve weeks for positive trends and significant changes in professional self-concept and self-concept to appear (p. 150).

Another dimension of the extended practicum and its effects was revealed by the comparative study undertaken by Covert and Clifton (1981). Following from the two clusters of studies at Memorial University and Simon Fraser University, they undertook to examine the effects of the practica on self-concept, motivation toward teaching, and attitudes toward a teaching career, at each institution. These two programmes were selected because they represented two extremes of student teaching experience (three weeks versus twenty weeks) among Canadian teacher-education programmes. Using a questionnaire composed of items from other sources, the researchers sampled students from both programmes before and after their practicum experiences. However, one group was pre-tested in September, at the beginning of their teacher education programme, but did not begin their two-week practicum until April. The other group had already experienced one six-week practicum before the pre-test, and was about to begin their second, thirteen-week experience. On the pre-test, the latter group scored significantly higher on all three measures. On the post-test, both groups improved slightly in self-concept, but the extended practicum students decreased significantly in motivation and attitude toward teaching in comparison with those who had only a two-week experience. Covert and Clifton (1981) explain these results with reference to the students' "reality shock" after experiencing an extended practicum:

> If the student teacher sees himself more like a student than a teacher, it would not be necessary to take on the responsibility of the job. . . . However, as the student teacher becomes more involved in the teacher role and the situation becomes more her responsibility, the possibility of escape becomes less of an option and therefore her attitudes about her chosen profession may decline. That is, the longer the practice period extends without appropriate psychic or monetary reward, the more depressed the attitude may become (pp. 14-15).

The apparently contradictory and yet complementary results obtained from the above studies illustrate many of the unresolved issues related to the conduct of research on the extended practicum and in teacher education as a whole. First, the studies reviewed focus on only one outcome whose relationship to successful teaching has not been defined. Other critical outcomes such as student-teachers' instructional and interpersonal competence, and their impact on children, have not been addressed here. Yet, even within this narrow framework, the evidence suggests that an interaction of

variables is at work. Second, these studies illustrate the difficulty of comparing programmes from one institution to another, where students may be in completely different contexts and programme experiences, so that control of treatment variables is impossible. In the case of Covert and Clifton's (1981) investigation, for instance, the timing of pre-test and post-test in the two situations may be a confounding variable. Nevertheless, these studies represent some of the more carefully designed and conducted research on teacher education in Canada, and provide a foundation and starting point for further research.

American Research in Teacher Education

Major studies have recently focused on competency-based teacher education and the effects of teacher performance on pupil achievement. There appears now to be a shift away from these topics, however, toward topics which pay more attention to the teacher as a person. For example, in an effort to assess the contributions of liberal education to the effectiveness of teaching, Broudy is conducting research on the effects that different sorts of educational studies have on the way teachers respond to selected topics representing different epistemological categories. At the University of Minnesota, researchers are studying the ways special training in cognitive development skills affects the classroom performance of student teachers; and at Michigan State University, priority is given to research on the decision-making styles of teachers.

Complex Nature of Research in Teacher Education

Research on teacher education is clearly a difficult undertaking because of the complicated nature of the phenomena being studied. Teacher education, whether formally constituted or not, consists of a long series of operations that are not yet clearly identified. Each of these, in turn, consists of complex sets of activities still not clearly identified or measured. Under these conditions research designs have been sought that

promise to account for a large number of factors and their interacting effects. Researchers have also turned to descriptive case studies and ethno-methodological studies in their effort to gain greater understanding of the phenomena.

SUPPORT FOR RESEARCH AND DISSEMINATION OF KNOWLEDGE

Sources of Research Funds

Research funds for teacher education studies for the most part seem to be committed funds because they are provided largely by interest groups of one kind or another. Some non-university sources are those foundations established to seek solutions to major educational problems such as mental retardation. Others are institutes which, although established with semi-independent status, tend to be task oriented. The professional organizations at the provincial and federal levels have similar interests in shaping the direction of the research being funded. The third common source of funding is found within the universities themselves. The research undertaken there frequently serves the much needed purpose of institutional planning but is in grave danger of neglecting essential theoretical work in favour of pressing practical matters.

Dissemination and Utilization of Research Findings

Because of the nature of the three major sources of funding for the very modest amount of research being done in teacher education, it follows that there is little stimulus to disseminate findings beyond the particular settings where the studies have been conducted. As a result, researchers in one part of Canada do not have easily available to them the results of the work being done by their colleagues in other parts of Canada or in aspects of teacher education research other than the area in which they are themselves engaged. For example, the work of R.K. Crocker at Memorial University has

not been circulated nationally, partly because those engaged in teacher education do not expect to be participants in such a research network. Added to this is the hurdle of translating the body of work that is being done in either of the official languages for dissemination to researchers in the other language group.

RECOMMENDATIONS FOR NEEDED RESEARCH IN TEACHER EDUCATION

Research in teacher education is a legitimate concern. The nature of schooling, the quality of teaching and the development of skilled professionals are clearly matters of concern to the well-being of all Canadians and important to the future strength of our citizens' contributions to Canada's role in the global community.

National attention and support are needed to develop the strength of the existing educational research community and of potential scholars in teacher education. There are large domains yet to be investigated (see Figure 1). Some specific research areas are identified here:

1. The impact of teacher training on beginning teachers. Instead of the typical study that is done in this area in which teachers are asked to comment on their training, an ethnographic study needs to be done to look at the actual impact of a teacher-training programme on such things as beginning teachers' activities, methods of organizing, verbal behaviour and perspectives for interpreting their experience.

2. The socialization of beginning teachers. The way in which the culture of the school acts as an informal training influence on beginning teachers needs to be documented. A follow-up to this study would be an examination of the mediating effects of alternative support systems for beginning teachers.

3. Teachers' work. What do teachers actually do and what are the working conditions of a modern teacher? Do training programmes reflect the real tasks of teachers?

4. Constraints on teacher education policy. How does the social, economic and ideological context in which teacher-education policy is made constrain the options considered by, or open to, policy-makers?

5. The governance of teacher education. Where does power over decisions in teacher education lie in practice? Who are the stake holders in o teacher education and how are their competing interests mediated?

Some specific aims of research should be -

1. to develop theory of teaching practice;
2. to identify conceptual analytical skills required for intelligently exercising social, intellectual and practical skills;
3. to understand the consequences of using particular concepts and skills;
4. to identify materials, procedures and institutional arrangements;
5. to synthesize existing knowledge and systematize professional wisdom;
6. to develop criteria for assessing principles, knowledge and type of practice included in teacher-education programmes;
7. to describe the nature of graduate study of teacher education in Canada;
8. to improve teacher diagnostic skills and ability to prescribe appropriate remedial measures;
9. to investigate teacher education policies and programmes in relation to Canada's manpower needs;
10. to identify the contributions of teacher education to non-school sectors of Canadian society and the implications of these for separating certification requirements from teacher-education studies.

RECOMMENDATIONS TO COUNCIL FOR SUPPORTING RESEARCH IN TEACHER EDUCATION

A serious attempt to establish the scope of teacher-education research in Canada reveals that articles in refereed journals constitute the proverbial tip of the iceberg. The largest body of investigations can best be characterized as institutional research and programme evaluation and these are seldom

published other than in the form of reports for limited circulation. As research, these studies lack generalizability and are vulnerable to the charges of self-interest leveled at the professors conducting them. Second to these studies is research undertaken by graduate students, only a small proportion of which is ever published since a high proportion of graduate students in Education will find themselves in professional roles with priorities other than the production of research. If credible research is required to advance understanding and to inform policy and practice, problems of perceived self-interest and failure to publish findings must be overcome.

Programmes to support research in teacher education nationally are clearly needed in order to make better use of the work now being done, to expand the amount of systematic inquiry being undertaken and to improve the quality of research endemic to this area of study.

Even the cursory overview provided in this report points up the fact that at present there are very few researchers and even fewer institutions who are committed to the mission of conducting research in teacher education. This fact represents at once the most obvious and most significant research lacuna and suggests the pressing need for the establishment of a number of centres committed to research and the dissemination of research in teacher education in Canada. It is therefore recommended that the Council introduce a programme to support the establishment of research centres for teacher education in each of the regions of Canada with the express purpose of creating an environment for research and the research network that is critically needed. It is further recommended that such centres involve the sponsorship of more than one teacher-education institution and make provision for participation in governance by professional and employee organizations.

In order to enhance the quality of the research being undertaken in the proposed centres and elsewhere, funding programmes will be needed to provide support for the training and re-training of researchers, post-doctoral programmes, exchange programmes for professors, release time for research, research workshops and support for beginning scholars in the field.

In addition, support from the Council is needed to improve dissemination of research knowledge and results. There is need for a network among researchers which could be established by providing assistance for editorial,

publication and distribution tasks. These tasks could be handled more efficiently if an information retrieval system for non-book materials and archival storage were to be made readily available. Council should also consider the importance of supporting the dissemination of Canadian research findings in more widely readable forms such as the report on the effects of schooling by British researchers entitled 15000 Hours. Published in pocketbook form, the possibility of increasing the impact of research on the wider public and on professional practice would be multiplied many times over.

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